RE-INVESTIGATING COASTAL TRADE: THE PORTS OF THE BRISTOL CHANNEL AND THE SEVERN ESTUARY, c. 1695 - c. 1704.

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Contents.

ABSTRACT.

Re-investigating coastal trade: the ports of the Bristol Channel and the Severn Estuary, c.1695-c.1704.

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This thesis provides a fresh perspective on the coastal trade of a major domestic region centred upon the port of Bristol. It acknowledges that coasting formed a vital link in the economy of pre-industrial England and Wales. However, coasting has been seen as the eternally poor relation of international and transoceanic commerce in studies of economic growth, urban development, and industrial diversification. This imbalance is addressed fully. The thesis sheds new light upon the volume, nature, structure and mechanisms of both the coastal and internal trades, and exposes to a more critical analysis the extent to which Bristol, as the major regional centre, acted as a 'quasi-metropolis' in the direction of the internal trade of its hinterland. A central theme is the computerisation, and examination of a wide sample of coastal Port Books for the ports of the Bristol Channel, over a limited but coherent timespan. Port Book data are also integrated with data gleaned from mercantile accounts to enable a thorough reconstruction of the means and motives of regional commerce to be devised.

The Introduction discusses the study of internal trade and argues that the lack of sustained research emanates from the absence of accessible and tractable quantitative evidence. With regard to coasting, problems surrounding the interpretation and manipulation of the coastal Port Books have limited many investigations. Similarly, the want of quantitative evidence has led many accounts of the region into repeating uncritically theories of the centrality of Bristol and its perceived metropolitan hegemony over regional patterns of trade. Chapter 1 analyses how Port Books have been utilised to date and provides a detailed methodological overview of the coastal Books for the Bristol Channel ports within the geographical and chronological parameters of the research. The Chapter also outlines the strategies of analysis and computerisation and the technical bases through which Port Books are structured for further study. The following Chapters use the datasets as case studies to shed new light upon the conduct of the coastal trade. Chapter 2 constructs a hierarchy of commercial activity at the regional ports and examines the spatial patterns of trade within the region; Chapter 3 provides an insight into the extent and range of goods carried, arguing that bulk staples did not wholly dominate coasting as is implied by secondary literature; and Chapter 4 analyses the level of mercantile organisation, boat provision and operation. In Chapter 5, Port Book data are combined with the accounts of Hoare and Company and William Alloway, two important Bridgwater merchant houses, to indicate how coastal, river and overland trade provided a complex, highly sophisticated transport system. The Conclusion suggests that the methods and techniques outlined in the thesis provide a basis for the re-interpretation of coastal trade, not only in the relation of Bristol to its nominally subordinate economic hinterland, but also in the wider significance of coasting to the development of the pre-industrial economy.

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Abbreviations.

BAO	Bristol Archive Office.
BCL	Bristol Central Library.
BM	British Museum.
CRO	Cornwall Record Office.
CSPD	*Calendar of State Papers Domestic.*
CTB	Calendar of Treasury Books.
CTP	Calendar of Treasury Papers.
DRO	Devon Record Office.
GRO	Glamorgan Record Office.
Jo HOC	Journals of the House of Commons.
MGRO	Mid-Glamorgan Record Office.
NDRO	North Devon Record Office
NLW	National Library of Wales
PRO	Public Record Office
SRO	Somerset Record Office.

Introduction

The objective of this thesis is to re-open debate about the nature and importance of the English coasting trade in the late seventeenth and early eighteenth centuries. Firstly, it seeks to subject the role of the port of Bristol within the economic articulation of its regional hinterland, the Bristol Channel, to fresh critical examination. This is achieved by applying a comprehensive, computer-based analysis upon the principal source for the interpretation of pre-industrial trade, the Exchequer Coastal Port Books, and focusing upon the nexus of commercial ties that linked ports, regional entrepots and their respective hinterlands over a defined period. As a result, the research aims to move away from classical studies of longitudinal economic change and sectoral development as represented by the work of Willan, for example, and analyse how coastal trade, often dismissed as too chaotic, opportunistic or complex to study in depth, was organised.[1]

Research has stressed that Bristol was central to the economic development of the south- west and Wales and its centripetal influence has been seen as the dynamic factor in explaining structural patterns of regional trade and marketing.[2] However, no attempt as yet has been made to examine rigorously how the links in this chain related the transoceanic trade of Bristol to the commercial hegemony it arguably enjoyed over its subject hinterland. The regional context of domestic trade, the activity of independent trade sectors, and the significance of localised commercial organisation remains largely neglected. This thesis seeks to address these issues by examining how internal trade operated within a major domestic region and the roles of notionally subject maritime nuclei by deconstructing the 'iron law' that sees Bristol as the unchallenged primate town. The issues outlined above provide the thematic undercurrent to the work although, like the vagaries of the region itself, many other issues and questions are examined. For these reasons, the Introduction provides a broad contextual overview of historiographical debates surrounding the pre-industrial economy of England and Wales and the significance of the coastal and internal trades.

i. Trade, economic growth and the region.

Economic historians have been largely concerned with providing aggregative long-run data to explain the transition to 'industrial' modes of production. Recent critiques have tended to stress models of gradualistic change or 'continuity' in the social, financial and technical framework of capital production generally associated with the classic phase of the 'industrial revolution'.[3] This corpus of 'new economic history' has provoked major revisions to the accepted chronology and historiography of economic growth to the extent that theories of explicit economic 'take-off' have been largely abandoned, and the traditional disjuncture between generically 'industrial' and 'pre-industrial' regimes obscured.[4] As research has stressed symbiotic and incremental approaches to economic growth, the traditional Rostowian orthodoxy of the achievement of a finite `critical mass' for industrialisation followed by rapid self-sustaining growth has been undermined.[5] Crafts has argued persuasively for the need to adopt cliometrically precise data in order to measure more 'reliably' the contours of economic change. Such work has *necessarily emphasised long-term factors. With slow change spreading out* from the later seventeenth century and, sectorally and regionally, perhaps even earlier, Crafts argues for 'research on the industrial revolution requiring a new generation of textbooks altogether'.[6]

The 'new orthodoxy' of slow growth has in turn been attacked. It has been argued that in many areas, especially those associated with manufacturing, industrialisation had profound, 'historically rapid' even revolutionary effects in regional growth, technological change and social and political impact.[7] It has also been acknowledged that the pre-industrial economy has been viewed largely in terms of later change.

There is, therefore, a need for study to be applied to earlier developments, which have been as yet only partially appraised. This is not to say that precursory elements to sustained Shumpeterian growth have not been analysed.[8] For example, the debate surrounding agricultural change and output - Braudel's 'crucial factor' - has stressed the

importance of the pre-industrial period in the diffusion of technological change and agrarian innovation, and in the development of links between agrarian marketing and urban consumption.[9] In addition, the elevation of the proto-industrial model to explain the organisation and capital structure of nascent industrial growth has emphasised how the early diversification of rural industry promoted regional specialisation and underpinned later sectoral expansion.[10] These are but two factors briefly mentioned. The interaction of many other factors - population change, consumer demand, urbanisation and financial and commercial advance for instance - were important in the gearing up of the pre-industrial economy. However, this thesis must necessarily be concerned with narrower issues and trade and internal trade in particular.

In terms of sectoral 'importance', if one can apportion such weight, Price is correct to bemoan the lack of a consistently maintained corpus of work relating to overseas trade.[11] Gradualist approaches have tended to denigrate the role of international commerce, although recent research suggests that foreign trade, export markets and commodities of transoceanic commerce such as sugar and tobacco, had important effects upon the domestic economy.[12] Even so, there exists a considerable, if slightly venerable quantitative databank mapping out the principal overseas trades.[13] With regard to the late seventeenth and early eighteenth century, there has been a tendency for indices of foreign overseas trade derived from such data to be the focus of comparative judgments of domestic economic performance and the criteria by which the relative importance of ports has been gauged.[14] For example, Professor Davis's axis between a 'commercial revolution' in foreign trade - the securing of protected markets, the growth of the export and entrepot trades, and the multiplier effects upon domestic manufacture and demand - and the industrialisation of the home market has its roots in such well-dug historical soil.[15]

The ready accessibility of statistical information relating to foreign trade has also greatly reinforced the imbalance towards the overseas component in analyses of regional development to the detriment of the internal and redistributive trades.[16] The historian is thus well supplied with estimates of overseas trade broken down by

commodity, geography, and commercial organisation.[17] What is more, it is to the statistics of overseas trade that historians have looked to apply empirically sensitive measures of research.[18] The drive towards a more exact, 'cliometric' view of economic history based on quantifiable data has, therefore, been firmly based within a tradition that emphasises the progressive role of overseas trade.

In comparison, internal trade has not been studied with equal rigour. Although, as Willan argued, it provided vital links between domestic patterns of production, consumption, and exchange, it has been regarded either as the concomitant of changes in other economic sectors, for example proto-industrial growth or agricultural improvement, or as the passive enabler of economic supply.[19] Undoubtedly, the comparative paucity and the obscurity of the surviving evidence has led both aggregative economic critiques and general histories to underestimate the contribution of internal trade to economic growth.[20] Unlike the overseas trades, there were no nationally compiled internal Customs, although local dues and manorial exactions survive erratically, and coastal Port Books were kept to police the payment of overseas duties. Similarly the accounts of internal traders have been studied less intensively than those of their counterparts trading overseas. This again highlights the 'fragmentary and dispersed' nature of the data. It also emphasises the persistent historiographical subordination of internal trade to overseas trade; to what a recent scholar has described as "real' trade - the sort that involved the merchants, made the money, gained the prestige and, incidentally paid the bulk of the port dues and the whole of the customs'.[21]

The assessment of internal trade is thus largely dependent upon studies of individual transport sectors,[22] and Chartres' limited but path-breaking overview of the subject.[23] This remains the most comprehensive attempt to tackle a subject all too readily reduced to 'tertiary sector' status in national aggregates of economic development.[24] Chartres' work has emphasised the inherent linkage between internal trade and the growth of the domestic economy. By the later seventeenth century, the home market articulated 'the great bulk of domestic products', accounting for some 90

per cent of Gross National Product.[25] As Chartres stressed: 'no assessment of the English economy in this period can be complete without an analysis of the state and development of internal trade. By many measures, it was of greater significance than the foreign trades which have been discussed so much more extensively by economic historians'.[26] An organised, capitalised system of internal trade was an essential prerequisite to the working of the market mechanism. This was not only apparent in the dispersal or collection of overseas cargoes, but also in the distribution of an increasing diversity and complexity of goods, raw materials and services of domestic provenance, themselves the result of progressive structural change in the home economy.

This is not the place to recount the metanarratives of such change or to apportion weight to 'single-factor' critiques of economic development. However, research into internal markets, domestic demand and the rural/urban interface of exchange has lent substantive weight to the importance of internal trade.[27] In addition, recent work has sought to relocate debate away from factors of supply, by extending a theory of consumerism, or more precisely a 'revolution' in personal consumption and material culture, to the pre-industrial period.[28] The chronology of consumerism in the seventeenth and eighteenth centuries is a matter of some controversy, and its roots can be perceived in such diverse sectors as agricultural specialisation, proto-industrial growth, overseas trade, and the slowing of population growth in the later seventeenth century contributing to the growth in real wages.[29] However, it is argued that a variety of staple goods, and what had hitherto been regarded as 'luxuries' were becoming more widespread, even 'mass consumed', in this period. These critiques emphasise the significance of internal trade to the development of vigorous networks of commercial and cultural distribution. To enable mass consumption, the infrastructure of internal trade - transport, warehousing, organisation, merchanting and retailing - must have been comparatively sophisticated and capitalised. Therefore, internal trade must be recognised as providing the matrix through which both economic and cultural interaction was materially facilitated.

Detailed research into the mechanisms of internal trade has been limited.

Undoubtedly, studies of carriers' directories and trading accounts have been important in undermining the dogmatic assumption that the pre-industrial road network was as deleterious as contemporary travellers implied, and which secondary accounts have repeated.[30] However, the provision of data for statistical enquiry, such as Chartres' 'service quotient' of expansion in the metropolitan waggon trade,[31] have been limited by the partial nature of the evidence. Most studies have failed to quantify the amount or types of goods carried, or, for that matter, to assess the extent to which trade was organised and conducted in the provinces.[32] Some important reconstructive work on the significance of overland trade to regional systems of transport has been undertaken by Hey. Yet, the absence of `vital' national statistics has often confined discussion of road transport to sparse reconstructions of the geographical progress of turnpiking or to accounts of institutional development, such as the development of turnpike trusts.[33]

Similarly, the lack of a coherent body of evidence has adversely affected studies of river trade. Undoubtedly, much effort has been expended examining physical improvements in river navigations or legislation or putative petitions for improvement as inferential indices of commercial expansion.[34] Although, toll Books and legal depositions have been examined and a vigorous debate surrounding the role of waterways in medieval England is currently being waged, evidence has often been tangential and conclusions regarding trade and the goods carried tentative.[35] In comparison, the survival of sources more amenable to quantitative research has greatly advanced the study of the coastal trade. Chartres has even argued that as a result 'historians may have exaggerated its importance in the total supply of transport services'.[36]

In particular, the coastal Port Books supply a chronologically extensive if problematic source. Professor Gras' early analysis of the provincial corn market demonstrated the ways in which the source could be used to illustrate sectoral change, levels of regional production, commodity specialisms, and the comparative importance of local ports in domestic trade.[37] However, Professor Willan's pioneering national overview, published in 1938, remains the most comprehensive study of coasting to date.

This emphasised the importance of the coastal Port Books in providing not only reliable statistical figures for the major headports and creeks in England and Wales, but also substantial information on the variety, diversity and mercantile organisation of goods traded coastally.[38] Most importantly, Willan argued that, as coastal Books did not involve Customs payments or direct money transactions, they were less subject to the irregularities of under-recording, negligence and malfeasance identified in the parallel series covering the overseas trades. As a result, the deficiencies of the overseas Port Books as statistically useful sources were unlikely to impinge upon coastal trade: data derived from the coastal Port Books were thus comparatively 'clean'.[39]

Subsequent studies have provided more detailed regional perspectives, emphasising the relation between coasting and the maritime economies of major ports and their hinterlands.[40] However, research using the coastal Books has been piecemeal and almost entirely reliant upon Willan's initial assumptions. As Andrews stressed, many studies have failed to account for temporal change in the compilation of records, and to allow for differences both within and between local Customs administrations.[41] Moreover, there has been a tendency to imply commercial change from the comparison of coastal trade 'statistics' derived from isolated years, neglecting the economic and administrative context under which they were compiled. As such, attempts to examine the organisation of coasting have been constrained to illustrative impressions of economic or maritime development, or conversely to the trade in specific commodities along the lines of Gras' study. Recent work has used Port Book data to examine the trade in grain,[42] lead,[43] copper and brass,[44] coal,[45] cloth,[46] earthenware,[47] livestock,[48] fish,[49] and even recycled goods.[50] However, in spite of this, more often than not Port Book material has been dismissed, even in the most comprehensive of studies of internal trade, as too problematic or has been used merely to supply illustrative material.[51] A second approach has been to publish *in extenso*. Yet, such compilations of transcribed, unsorted information have often lacked a sufficiently critical assessment of the source, with the result that data is either unreliable or subject to misinterpretation.[52]

Undoubtedly, the limited nature of these approaches has proceeded from the unwieldy nature of the records. Historians have been defeated less by doubts regarding the reliability or integrity of Port Book evidence, than by the physical problems of dealing critically and quantitatively with a sprawling source. For example, the coastal Port Books of even a medium sized provincial port in the later seventeenth century comprise four to five hundred voyages a year, each with records of dates, boats, ports, shippers, and a variety of traded commodities per voyage. At Bristol around 30,000 pieces of data of this kind are recorded for 1699 alone.[53]

The solution adopted in this thesis has been to employ a programme of comprehensive computerisation to compile, store and retrieve Portbook data whilst retaining an historically sensitive, flexible, yet critical awareness of the source; an approach developed at Wolverhampton University from ten years' work on the Gloucester coastal Port Books.[54] The ground-breaking studies of Dr Wanklyn and Dr Wakelin have provided a definitive critique of pre-industrial trade on the river Severn.[55] This research has liberated much data hitherto confined by the impenetrability of coastal Port Books and has stressed the potential to future scholars of computer-aided enquiry. As Crafts has argued, studies of economic development demand 'not so much new data, but rather improvements in the handling of existing information'.[56]

None the less, such study has been limited by its pioneering approach. It is for example necessarily monofocal, and unduly reliant upon the reliability over time of one source for one locus: a rationale for which Andrews has already provided incisive critiques.[57] Thus, although important approaches have been developed, research has merely scratched the surface. The main objective of this thesis is to cast the net much wider and extend the basis of enquiry by synthesising data from inter-connecting coastal centres over a defined time period. By examining a large corpus of Portbook material, work is focused upon the wider importance of coasting within a major trading region rather than constructing longitudinal assessments of individual trading centres. The study also qualifies theories concerning the centricity of Bristol within the Bristol

Channel by examining the variables which determined the economics of regional coasting. Whereas it must be remembered that coasting is only one index of relative commercial importance, computerisation has meant that it forms perhaps the most comprehensive available to the historian of pre-industrial trade.

ii. The trade of Bristol and the regional hinterland.

Recent work has done much to reinforce the axiom that seventeenth and eighteenth century Bristol dominated a dependent economic region: a 'double hinterland' comprising not only a subordinate home market, but also the port's multiple overseas interests.[58] This thesis is not concerned with overseas trade or the extension of Bristol's commercial hegemony over Ireland or the West Indies - factors which have absorbed generations of historians - but the level to which Bristol proved to be the pivot around which the greater part of the coastal economy of the south-west of England and south Wales articulated. The parameters of this influence varied according to long-term and incidental factors. In an age of essentially primary production, Bristol's regional importance was dependent upon the interaction of complex commercial and physical factors and the extent to which proximate centres of importance expanded or declined.

Most historians have viewed Bristol as the cohesive and dynamic element in provincial trade. This has been attributed to the importance of its physical situation, its access to navigable inland waterways and deep-water anchorages,[59] the port's regional dominance in the overseas trades, and the growth of the city itself. By the early eighteenth century, Bristol had a population of around 20,000 which exerted a vital pull upon the goods and services of the region.[60] Such elements are germane to any large or even middle-ranking sea-port in an age of commercial expansion. However, the heterogeneity of Bristol's development was remarkable. By 1700, the port was the regional centre of commercial services, finance, credit and marketing: Bristol capital was important in the 'pump-priming' of many regional economies and nascent industries.[61] The city also possessed a burgeoning industrial sector including soap,

glass, distilling, pipe-making, and ferrous and non-ferrous metal-working in addition to the processing industries associated with imported goods such as sugar, tobacco and wine.[62] Bristol may also have acted as a primordial social capital. Barry, Borsay and Estabrook have alluded to its importance in dispensing a debased, provincialised kind of high material culture as a corollary to its wider economic hegemony.[63]

However, the most complete discussion of Bristol's economic centricity is to be found in the work of Professor Minchinton. Minchinton proposed a model by which 'quasi-metropolitan' Bristol imposed a vital polarity upon the trade and economy of the south-west and, less explicitly, Wales.[64] Bristol's primacy was a peculiarly provincial and temporal phenomenon, a regional hiatus in the growth of a fully metropolitan market.[65] In the eighteenth century the relation between the regional hinterland and Bristol could still be seen in terms of the progressive subjugation of lesser, fragmented and highly localised economies to the dominant urban and commercial market. The agglomeration of trade was the paradigm of Bristol's importance, serving to emphasise the economic dynamism of Bristol in gearing the regional economy. Using Gras' price indices of grain and Fisher's analysis of the London food market, Minchinton sought to emphasise how Bristol occupied a regional focus or central place to which the more important commercial arteries flowed.[66] These in turn dispersed high quality producer and consumer goods, overseas wares and capital throughout the hinterland. However, such a model has serious flaws: Bristol was no London and in terms of cultural provision it was no Bath. It did not rival the levels of economic influence enjoyed by the capital or was it as important in defining the direction and velocity of internal trade. By 1700, London maintained a population of over half a million, perhaps 25 times as large as Bristol;[67] the supply of this Leviathan and its ever-increasing voracity for consumption involved the whole nation and imposed reciprocal 'generative' effects upon regional economic growth and specialisation.[68]

None the less, the importance of primate towns has been the subject of recent historiographical interest. Attempts to re-interpret and disaggregate national, macro-economic patterns of economic growth have, for example, emphasised the dynamic role

of urban centres in the diversity of regional economies and in the organisation of trade.[69] One of the more important preoccupations of urban history has been the analysis of the linkages between town and hinterland, even though more attention has been focused on quantifying and stratifying urban growth through hierarchical models of rank-size.[70] The historian has been well provided with case studies ranging from dissections of 'metropolitan' provincial capitals,[71] to accounts of the more diffuse experience of small towns,[72] whilst, in a wider context, de Vries, Bairoch and Goertz have used similar if more sensitive methodologies to underpin studies of European urbanisation.[73] However, such rank-size models only address the relation between town and hinterland tangentially. On the other hand, studies of agricultural marketing and the dynamic town/country interface have suggested the importance of regional and inter-urban links.[74] This has also been a theme developed by Corfield in studying the viability of small towns,[75] and by Noble with regard to regional urban networks.[76]

Yet very little work has been done to place large towns within regional networks or to provide a quantitative framework upon which to base sound judgments.[77] In particular, the incremental 'totting-up' of the factors underpinning Bristol's 'quasi-metropolitan' position has relied strongly upon anecdotal or impressionistic assessments.[78] Thus, Defoe's tantalising descriptions of the organisation, marketing and dispersal of goods through Bristol, the relation between overseas merchant and domestic wholesaler, the ubiquitous Bristol shopkeeper, the ability of Bristol to 'trade with a greater independency of London' than any other provincial town and to maintain a vigorous internal trade, are not substantiated by quantitative data.[79] Nevertheless, such views have passed largely uncritically into the accepted historical canon.[80] What is more, studies that have employed sources amenable to quantitative analysis, such as the coastal Port Books, have tended to use data illustratively to impute commercial change.[81] Thus, there has been a tendency to describe trades and to depict commodity flows as mere inventories of goods: no rigorous attempt has been made to sort or quantify goods or to assess the consistency of the source over time.[82] In addition, attempts to assess the trade of the presumptive subject hinterland in terms of

independent economic organisation have been generally stillborn.

In spite of such criticisms, the metropolitan model remains important in emphasising the central nature of internal trade to the functioning of Bristol and the region. It has provided an important counterbalance to the London-oriented 'metrocentric school of early modern history',[83] and the tendency to draw conclusions concerning regional trade through an analysis of either abstracted trends in overseas commerce or the comparative importance of Bristol's incorporated mercantile oligarchy.[84] These tendencies have led to a fairly nebulous periodisation of the historiography of Bristol. In particular, the most pervasive image of Bristol links an eighteenth century `Golden Age' of aggressive exploitation of the colonial and overseas trades to economic and physical expansion.[85] Thus, the rise of Bristol has become generally equated with its increased share of the colonial and Atlantic marts. The standard, composite profiles of the port have firmly ascribed Bristol's economic hegemony to the overseas and re- export trades,[86] and its regional importance has been seen largely in terms of translocating the products of foreign trade to the subordinate economies of the hinterland.[87] In a similar fashion, Crawford, Pares, Morgan, Richardson and MacInnes have stressed the capital gains accruing from the wine, sugar, tobacco and slave trades.[88] Recently, Sacks' comprehensive account of the transition of Bristol to an 'early capitalist' economy with the concurrent tensions this imposed upon commerce and society, has emphasised the importance of the Atlantic economy, above and beyond the domestic economic aegis of the port.[89] Later studies have stressed that the decline of the port in the later eighteenth century was directly linked to the economic stagnation of its hinterland and the more aggressive expansion of Liverpool. Yet there has been disappointingly little work on the locality and no account of Bristol merchants associated with internal trade which is comparable to the studies of overseas merchants or the later business community.[90]

The deference to overseas trade is also reflected in the histories of regional ports, mercantile communities and port development.[91] Most studies have relied upon Willan's brief analysis of regional coasting to supply a statistical decoration to

discussions of local change or commercial organisation.[92] Willan's findings have been supplemented by work on individual commodities, such as the south-Wales coal trade,[93] and, perhaps most impressively, Grant's reconstruction of the trade in north Devon earthenware. Yet even these studies have suffered from an inability to handle a limited amount of Port Book data in a fully comprehensive way.[94] In comparison, thorough examinations of regional patterns of coasting have been noticeably lacking. George's limited dissection of Pembrokeshire sea-trading marks an important contribution, yet it remains little more than a cursory introduction to the principal trades and ports.[95] The most extensive quantitative analysis of regional internal trade has focused on the river Severn.[96] This has greatly extended knowledge of physical improvement and navigability,[97] and has provided the methodological tools for the enhanced analysis of coastal Port Books. However, it has only addressed coasting in a tangential and inferential way. Moreover, the Severn-Bristol link, exposed by this research, forms only a small though important part of the totality of coasting in the region.

The association between Bristol and the south-west and Wales still remains to be studied effectively. Although much work has examined the demography, economy and development of individual towns in this region, there has been very little attempt to synthesise discrete works or to gauge the level of intra-regional association. Theories of 'metropolitanisation' remain inconclusive assumptions of the commercial relation between Bristol and its hinterland. What are still tentative assertions can only be evaluated by applied quantitative research into the sources that describe the region's economic and commercial position most effectively from the perspective of the outlier ports as well as that of Bristol. New methods and techniques need to be developed to invert the metropolitan paradigm and explain how local centres interacted within a regional system. For this purpose, the most comprehensive and indicative index remains the records of the coastal trade.

iii. Aims and methodology of the study.

It is apparent that internal trade has not been the focus of a sustained body of research and that new approaches along the lines of recent critiques of road and river trade have to be found if its sectoral contribution to economic development is to be reappraised. However, coastal trade, for long the only area examined in any detail, has not been the subject of such thoroughgoing critiques. Thus, the primary aim of this thesis is to analyse the means and mechanisms by which goods were traded coastally within a major domestic region, and to define and assess how this trade was conducted, organised and promoted. Undoubtedly, much research has been focused upon the role of Bristol as the economic fulcrum around which the trade of a wide and economically diverse hinterland pivoted, yet most discussion has been motivated by considerations of how overseas trade impacted upon the port and its merchant oligarchy. Few studies have sought to examine how the vital entrepot functions of Bristol were reflected in the domestic and regional economy. Similarly, there has been little academic interest in how the coastal trade of the hinterland was structured, or how the economies of those ports and environs nominally subject to Bristol's 'quasi-metropolitan' hegemony operated. Studies that have attempted such overviews have been hamstrung by either an absence of readily available source material or conversely the proliferation of intractable data. Often little more than the broadest outline of trade has been provided.

The thesis seeks to provide a more comprehensive quantitative base for the study of the coastal trade of the Bristol Channel. The study thus focuses upon the one source amenable to such sustained analysis, the Exchequer coastal Port Books for the region. This represents the extension of empirical work assessing pre-industrial trade on the river Severn. Undoubtedly, most substantial ports and many trades have been analysed through the coastal Books, and few such works do not contain some illustrative Port Book material albeit largely used in piecemeal or selective ways. However, even the more extensive studies of ports have tended to rely upon a single set of Port Books, the integrity of which varied over time over time.[98] This thesis takes a

wider perspective by combining information from a series of Books for different ports, using computerised forms of storage, retrieval and analysis. Through this the research seeks to open up new methodologies and techniques. For example, computerisation permits Port Book data to be subjected to numerous enquiries, to be combined in 'experimental' ways, and to be exchanged with scholars working in different fields. In addition, these benefits have been amplified by the integration of Port Book information with 'soft data' derived from merchant papers. Whilst such papers have always formed a staple of research, they have been used relatively sparingly in studies of internal trade. Through a more limited programme of computerisation, selected merchant papers are beginning to add local substance to Port Book data and throw a perceptive light on the organisation of regional coasting.[99]

The problems of describing, assessing and contextualising regions have been extensively and often elegantly rehearsed by many historians and historical geographers, as well as occupying fifteen volumes of specialist research and discussion.[100] This study examines a broadly conceived yet spatially consistent 'Bristol Channel region', based on the domestic hinterland of Bristol, and specifically the 15 Customs head and member ports from Mounts' Bay, (Penzance), in Cornwall, to Milford in Pembrokeshire.[101] The region owed its coherence to a network of coastal and river systems and the substantial cost advantages water transport brought to the carriage of goods, especially low-value\high-bulk staples.[102] This was extended by improvements in river navigation, advances in the operational efficiency of coasters,[103] and the links overland trade provided with local and more distant markets.[104] Although this region, presented in Figure 0.1, is not without some interpretational difficulty, it formed a distinct economic enclave, characterised by enclosed, navigationally 'safe' waters.[105] In addition, the parameters marked by Land's End and St. David's Head have been widely recognised by contemporary commentators as the acknowledged domestic hinterland of Bristol and have been co-opted as such into more recent critiques.[106]

A further structural device has been employed by which research has been

focused upon a core period from 1695 to 1704. This has enabled the synthesis of acceptable levels of record extancy and data-capture, with a substantial chronological component, and the ability to study a cross-section of the economy and commerce of a major domestic region at a time of general commercial expansion. It has also countered the major inherent problem of longitudinal regional surveys, namely explaining change over time from discontinuous sources, or, as in Willan's monograph, from samples ripped from their historical and administrative contexts.[107]

In terms of coasting, a quadrilateral of Customs ports - Bristol, Gloucester and Chepstow, and Cardiff - formed a central focus to the region. This encompassed the most sheltered coastal waters navigable to the river vessels of the Severn and Wye,[108] and was effectively bounded to the west by Steep Holm and Flat Holm.[109] Bristol's regional dominance was felt most strongly in this area. Its extensive and regionally unrivalled overseas links supplied a vast selection of goods, augmented by local industrial products and the commodities gained from the wider region. Such trades were dependent upon viable internal markets and consistent sources of supply. The river Severn, navigable to Pool Quay near Welshpool, linked Bristol to the agriculturally diverse areas of the Midland plain and the Vale of Evesham; the industrialising core of the Severn Gorge and west Midlands and the major urban markets of the Severn valley and Warwickshire Avon.[110] The volume and density of trade centred upon the Bristol-Severn nexus emphasised the importance of the river to Bristol's continued commercial strength and independence.[111] Recent research has stressed that the Severn acted as a highly functional system of transport, delivering not only bulk consignments but also shop-sized goods to and from Bristol.[112] What is more, the integration of probate material with Port Books reveals that the trading economy and distributive network of the Severn alley was closely linked to that of Bristol.[113]

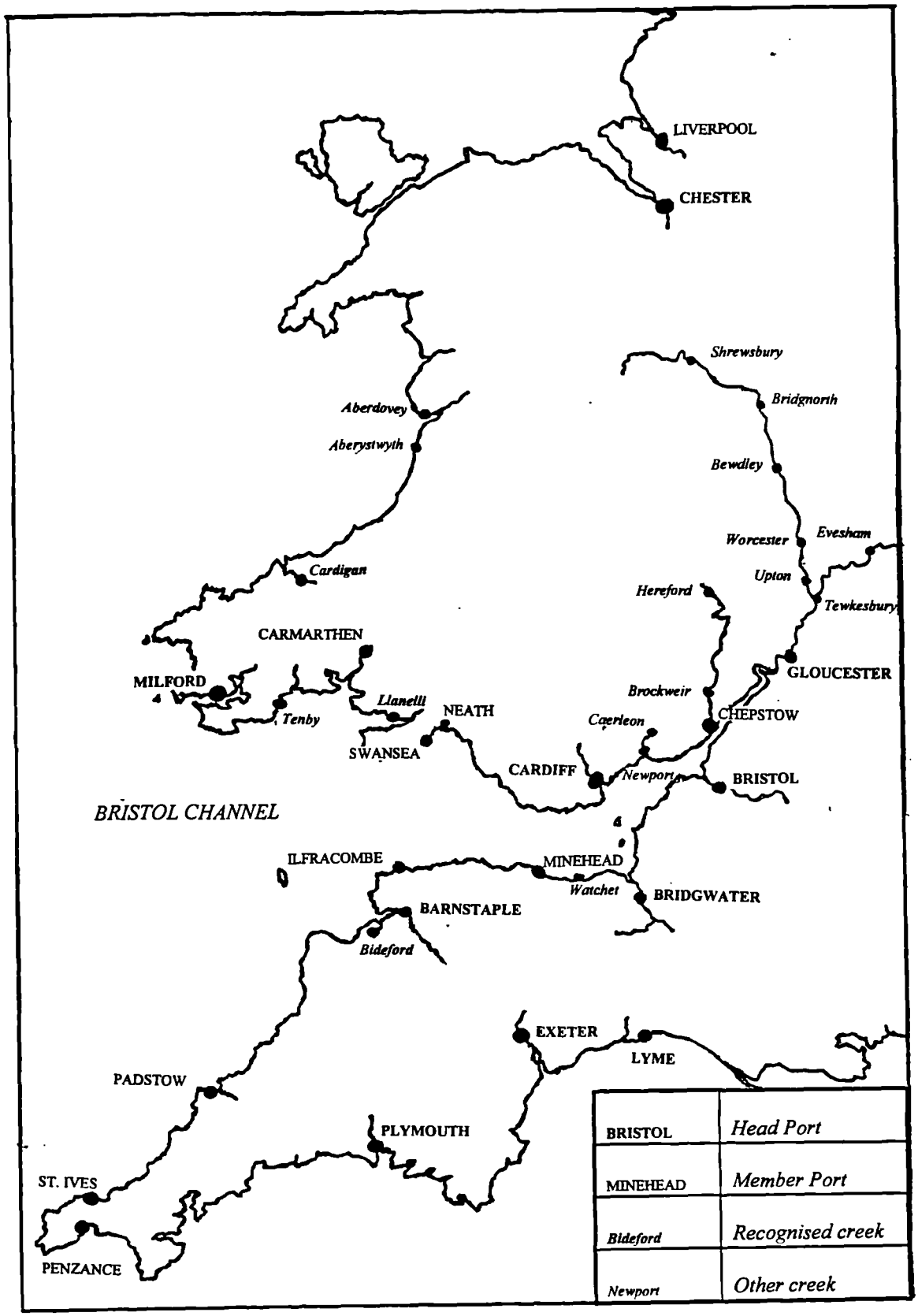
However, the operation of trade remained dependent upon the tidal zone and the consequent limitations this imposed upon river craft. Access to the Bristol Avon was

hazardous and navigating the middle and upper reaches of the river was largely dependent on the impetus of the Spring tide and even then the river above Tewkesbury was only passable to flat-bottomed trows. Such vessels were generally constrained to the navigation proper and the stretch of sheltered littoral water bounded by the Holms, although they occasionally ventured along the coasts of South Wales and south-west England.[114] For transport further afield, transshipment at Bristol was the norm. Bristol thus acted as much as a physical filter through which the goods of the Severn hinterland passed, as an economic and commercial entrepot.[115]

On the west bank, Chepstow acted as an entrepot for goods brought down the Wye from the corn lands, pastures and orchards of Herefordshire, the industries of the Forest of Dean and local centres such as Brockweir and Redbrook.[116] Cider, hops, timberstuff, wooden ware, millstones, iron and ironwares, copper and wire formed Chepstow's staple coastal trades. In contrast, Cardiff and its creeks Newport and Caerleon, remained minor places of trade, dominated by the trade in the agricultural goods and rural crafts from the Vale of Glamorgan.

Below the Holms, western Glamorganshire and south-west Wales formed an 'outer region' markedly less well developed and dominated by agrarian production.[117] The area was effectively divided between a more densely settled and agriculturally advanced lowland and coastal 'pale' extending from the Severnside wetlands and the Vale of Glamorgan to the 'Englishries' of the Gower peninsula and Pembrokeshire, and a sparsely settled swathe of marginal pasturage and barren upland to the north.[118] Its agricultural surpluses were geared to the Bristol provisions market, and the livestock, textile and urban centres of the south-west, north Wales and north-west England. Milford, Carmarthen and to a lesser extent, Tenby dominated the latter trades.[119] Bituminous coals shipped largely from Swansea, Neath, and Llanelli and mainly anthracite from Milford and Tenby formed the bulk of Welsh trade.[120] Industrial development was comparatively retarded until the eighteenth century, although interests in copper and lead smelting were established at Neath in the 1690's.[121]

Figure 0.1: The Bristol Channel region, c.1699.



In comparison the south-west of England was more developed. Access to the Bristol Channel brought the northern districts of Somerset, Devon and Cornwall within the wider ambit of Bristol.[122] Four major import trades characterised commerce: a regular traffic in wool from South Wales, Ireland and the Midland counties largely for the cloth industry of the south west and Wiltshire, but also for re-export;[123] the trade in livestock from south Wales;[124] the salt trade with Gloucester and Liverpool; and the staple coal trade. Exports included agricultural goods, woollen cloth, earthenware, and the products of the inshore and long-distance fisheries.

Bridgwater and Minehead and the broad coastal inlets of the rivers Parrett and Tone provided the principal focus of regional trade, giving access to the mixed pastoral grounds of the lower Quantock and Brendon Hills and the prosperous arable economy of the vale of Taunton Deane.[125] Here, trade was focused upon a central corridor of more developed land use, industrial concentration and nucleated settlement formed by the conjunction of Taunton Deane and the substantial meadow and pasture land of the Somerset Levels, increasingly used for new 'industrial' crops and market vegetables, with the upper reaches of the Exe valley to the south and west.[126] This area established a vital connection between the Bristol Channel ports of Minehead and Bridgwater and the overseas entrepot of Exeter through a radial network of packhorse roads. It was also the means by which east Devon was supplied with much coal, and wool after the closing of Exeter as a staple port in 1693.[127]

The Taw-Torridge basin formed the second focus of trade, a developed and sheltered deepwater anchorage set in a fertile lowland plain and centred upon the Customs ports of Barnstaple and Bideford.[128] By 1700 the area supported a flourishing overseas and coastal re-export trade in tobacco, and also possessed substantial interests in the Newfoundland cod and domestic herring fisheries.[129] In these trades, Bideford had outstripped Barnstaple, although the headport maintained its role as an inland entrepot.[130] Nevertheless, the estuarine hinterland of both ports remained severely limited in terms of markets and indigenous industries. Only vernacular earthenware and local ball clay enjoyed a sizable regional and overseas

trade,[131] supplementing basic agricultural, fishery and mineral staples.

The smaller south-western ports were less important. Ilfracombe served a parochial hinterland constricted by upland Exmoor to the east and the Taw-Torridge basin to the south. Its harbour was however of some significance as a convenient coastal landing place, and as a major centre of the herring trade.[132] The trade of the north Cornish ports was similarly limited. Navigational difficulties and the excessive silting of the river Camel severely undermined the utility of Padstow in all but the local and Irish trades, and the exposed harbour of St. Ives was accessible only to smaller coasters.[133] Both ports remained redistributive centres for the local economy with an erratic coastal trade in copper ore, tin and hilling stones.

Land's End and St. David's Head served as the effective parameters to the region. Throughout the period, the small ports of Cardigan Bay were largely concerned with transporting agricultural goods to the north west of England. Although small cargoes of lead ore were sent to south Wales, the west and north Wales ports were more firmly drawn into the trading hinterland of Chester, Liverpool and Ireland.[134] Land's End also formed a distinct if not impassible barrier to seaborne trade. Freight charges reflected the prohibitive nature of rounding Land's End especially during winter, and the compressed geography and limited economic means of the extreme western arm of the peninsula encouraged the use of overland routes and the Exe ports. Although Mounts Bay is included in this survey, both its trade, and the trade of the south Cornish ports were linked more to Plymouth, Exeter and London than the Bristol Channel.[135] Inter-regional trade did occur, particularly where demand was sufficient to make long-distance coasting economic. As with Pembrokeshire anthracite or Cheshire salt, commerce was conducted upon a fairly regular basis. Similarly, the redistribution of overseas, colonial and domestic produce between Bristol, Exeter and London remained regular trades. However, this did not match the frequency of trade within the region.

iv. Conclusion

This Introduction has emphasised the need to re-assess the contribution of internal and coastal trade to the pre-industrial economy. It has stressed that the imbalance of research towards both national studies of sectoral growth and international trade has severely undermined the study of internal trade and underplayed its importance in economic development. This has been reflected in the limited academic interest shown in the subject. The relegation of much research to discussions of the institutional basis to transport development has caused internal trade to be seen as the eternally poor cousin of high-value transoceanic commerce and the activities of high- profile overseas merchants and merchant companies. Whilst some research has been undertaken into coasting, few studies have examined its structural foundations. Thus, there has been a tendency to limit research to the trade in widely-recognised bulk staples, such as coal and grain, and many works have been shackled by the intractable nature of much of the extant evidence. The need for a more comprehensive quantitative platform upon which thorough studies of coasting can be based is therefore central to its scholarly rehabilitation.

The thesis aims to address these factors by undertaking research on two fronts. Firstly, it focuses upon a major domestic region surrounding the port of Bristol and centred upon the Bristol Channel. Through this many of the goods and commodities of a broad swathe of land from Cheshire to Cornwall and from mid-Wales to Wiltshire and Oxfordshire were traded internally. This region has been seen largely as a subject hinterland, the domestic 'quasi- metropolitan' reflection of Bristol's spectacular rise in the seventeenth and early eighteenth centuries and of the hold it exerted over overseas commerce. This research examines trade from the perspective of the hinterland as well as that of the centre, and extends a comprehensive and flexible system of computerisation to a large selection of coastal Port Books. This provides new quantitative data concerning the conduct, content and organisation of coasting for all ports in the region. The application of such data to address important relational and

structural questions, largely sidestepped by previous work, forms the central core of the study. The evidence of these datasets is also contextualised by using more qualitative data, particularly selected merchant account books which have been computerised in similar fashion. It is hoped that the methodologies employed will not only advance the study of coastal trade and allied issues involving regional patterns of production and consumption, but also provide both a working model and a resource for future researchers.

Chapter 1: The Port Books of the Bristol Channel

The introduction has emphasised two major gaps in the study of the coastal trade of the Bristol Channel region in the seventeenth and eighteenth centuries. Principally, a lack of considered methodological and quantitative research applied to the extant sources has led to inconsistency and the reliance on chronologically abstracted, often discrete surveys of trade. This approach has tended to stress the 'visible' areas of trade: overseas commerce and domestic staples. Much analysis has taken place in isolation, with reference to individual trades, ports or groups of generally incorporated merchants and not from a regional or provincial perspective. Secondly, the relation of Bristol to the south-west and Wales has been described in terms of an economic hegemony over a commercially dependent, satellite hinterland. Although such an over-arching theory has much superficial attraction and retains much importance in relating disparate individual studies, it has, none the less, helped to limit analysis to cursory and often less than critical surveys of the main sources.

This situation has been exacerbated by the general absence of corroborative quantitative material. In particular, the one source that can provide sound data, the Exchequer coastal Port Books, has generally been used in a partial and unsystematic fashion. If coastal trade is to be re-appraised, a considered rehabilitation of this major source is necessary. This aim of this section is, therefore, to outline the methodological framework by which Port Books have been rendered available, not only for the purposes of the present research, but also for wider academic enquiry. It examines how the Port Books were constructed, the information they contain, and the integrity of the source. In addition, an account is given of the major strategies of investigation pursued in the thesis, indicating how advancements in computer-aided analysis and software technology have permitted the study of a comprehensive sample of records for the ports of the Bristol Channel between 1695 and 1704.

i. Coastal Port Books: a critique.

The inherent difficulties of dealing consistently with coastal Port Books have been widely stressed. They have been seen as tarred with the problems traditionally associated with overseas Port Books: evasion, malpractice, poor or downright dilatory compilation, and the innate corruption of a venal Customs system.[1] Despite this, coastal Port Books have been used copiously to provide a numerical impression of many aspects of regional trade. Urban and local historians have pioneered the use of Port Book data to assess the economic coherence of regions, the interaction of urban economies, and the organisation of merchant communities.[2] The most intractable problems have been found in manipulating the sheer volume of data using manual sorting methods, rather than any perceived doubts concerning the veracity of the Port Books. Willan, for example, was more confounded by the miscellaneous, 'unstatistical' nature of Bristol's trade than an overriding concern about the historical basis of the record.[3] Moreover, recent research has begun to re-evaluate the source and has demonstrated that, in the absence of an equivalently comprehensive series of national or local sources, the coastal Port Books provide perhaps the only significant quantifiable source dealing with pre-industrial internal trade.[4] Although there have been some very detailed case studies, the nature and movement of goods, regional industrial and agricultural development, and the development of internal distribution networks would remain largely a matter of informed conjecture without the testimony of coastal Port Books.[5]

None the less, the analysis of Port Book material has reflected its ambivalence and complexity. Thus, Willan's initial and now rather dated overall survey has not been seriously challenged,[6] despite the researches of Andrews, Williams and Jarvis.[7] More generalised maritime or economic histories of ports have used Port Book data to compile overviews of local commercial development,[8] and this body of work has been supplemented by a limited number of studies explaining the local and regional importance of Port Books and allied documents.[9] However, many reviews of coastal

trade have been found wanting in methodology, interpretation and scope. The most problematic area has been the lack of cohesion or sense of overview in many studies. Those that have attempted some numerical projections of trade have tended to limit research to a single port or group of closely associated ports. Alternatively, some historians have focused attention upon the Port Books of the pre-Civil War period where records tend to be less substantial and less fastidiously compiled, rendering the datasets more compact. It would be overly cynical to suggest that the attraction of small datasets is the only motivation for such work, but the historiography of this period far outweighs later studies.[10]

The most comprehensive accounts relating to later periods have focused upon the trade of the river Severn recorded at Gloucester.[11] Whilst these studies have opened up profoundly new vistas on the riparian economy of the area, they have been confined to essentially linear and longitudinal studies of development and have understandably sidestepped the wider issues of coastal trade beyond the very sheltered waters of the upper Bristol Channel. In particular these studies have emphasised the 'unusual' character of Gloucester, a port with relatively little trade of its own, but serving as the entrepot through which trade with Bristol and the Bristol Channel was conducted by larger up-river ports.[12] The administrative head was thus very much wagged by the commercially more important tail. This definition of river trade as economically and administratively distinct from purely coastal trade has left many methodological issues unanswered. One has to ask to what extent was Gloucester a 'special case', a quantifier's dream untroubled by significantly corrupt or problematic data. Certainly, Wakelin's research has implied that the Gloucester Port Books for the core sample years between c.1684 and c.1722 were remarkably standard and this consistency was translated into the integrity of the data. Yet a more sceptical picture has been painted for other ports. Andrews, for example, has demonstrated the extent of erratic recording at the Kent ports.[13] Moreover, the discontinuity of administrative methods between ports and the persistence of local practice has questioned the reliability of Port Books for certain centres, trades and periods.[14] For instance,

Williams and Bettey have shown that the coastal trade in Welsh livestock reveals a high degree of omission at the Glamorganshire ports.[15] The present thesis, by systematically analysing the records from a more extensive cross-section of ports, seeks to assess the significance of differences in the compilation of coastal Books and in the quality of the superintendence of trade by Customs officers. An allied problem has been the difficulty of obtaining sufficient additional material with which to evaluate Port Book data.[16] Chartres, for example, has expressed concern over the 'fragmentary and rather uncertain materials' upon which the historian of internal trade has to rely, a sentiment echoed in many recent studies of the sector.[17] The reliance upon the sole testimony of the Port Books, therefore, is problematic. For this reason, Willan's discussion of the west-country ports is perhaps the most unconvincing Chapter in his *Coasting Trade*. In this, notionally representative trade figures are taken from uncontextualised and far-flung samples of Port Books and combined with stylised narratives of individual ports to sketch commercial and maritime development.[18] Thus, comparative sources are vital in confirming the importance, integrity and continuity of the coastal Port Books. This thesis emphasises the need to adopt such an approach by combining quantifiable Port Book data with such 'fragmentary' sources to provide an understanding of the system of organisation and mercantile control that underpinned coasting.[19] However, before this can be discussed in detail, it is important to outline the Customs system through the system was maintained.

ii. Defining the coastal trade: Customs administration and the Port Books of the Bristol Channel.

Historians have sought to describe structural change in the Customs system from the time of Crouch's observations in the eighteenth century.[20] The mechanisms by which this bureaucracy recorded coastal trade has also occupied much research.[21] The most recent, thoroughgoing examination of local practice has been Wakelin's account of Gloucester. However, this reveals two major weaknesses. Firstly, Gloucester was

unrepresentative of most coastal ports, and secondly the study relies upon the internal evidence of a single series of Port Books to confirm both the integrity of the Customs system that compiled them and, by implication, the Port Books themselves. This section places the problems surrounding the administration of the Port Books, isolated by Andrews and Wakelin, within a more *regional* and *coastal* context.[22] Although it does not claim to posit a definitive critique of the Port Book system given the compressed timescale, the complexities inherent in studying the administration of internal trade are addressed and the reliability of the source from port to port directly compared.

It is well established that Port Books evolved in an incremental and ad hoc fashion.[23] Their significance was both fiscal and administrative. Port Books were instituted primarily to oversee and police the collection of customs duties on goods traded overseas and to enforce the provisions of the Navigation Acts regarding boat construction, crew composition and the provenance and destination of enumerated commodities in the overseas trades.[24] Overseas Port Books were kept severally and in duplicate by three Patent officers, Customer, Comptroller, and Surveyor, attached to each appointed port.[25] Such positions had wide ranging duties offering opportunities for venality. This often led to disputations concerning the gulf between the perceived and stated duty of office holders and the degree of competence, petty malfeasance and downright financial impropriety that was regularly and, in the case of Bristol, infamously practised.[26] By way of reinforcing revenue collection, shipments passing between domestic ports were verified through the coastal Port Books. These ensured that goods did not pass overseas under colour of coastal movement by enforcing the deposit of a substantial returnable bond as surety for the domestic completion of the voyage. This bipartite system was formalised by statute in 1558 and by Exchequer Order in 1564, reaffirmed in 1671.[27] Until the system was abolished in 1799, Port Books were kept for 122 Customs ports collectively responsible for the many creeks and harbours of the coast.[28]

The bounds to these ports, however, have caused interpretational problems.

Both Jarvis and Andrews have emphasised that the term 'port' referred not to a single maritime nucleus or collection of quays, (although such an interpretation is of more relevance to the control of overseas trade),[29] but to a strictly delimited length of coastline subject to the superintendence and jurisdiction of a central Head Port or Member port. The 'extents, bounds and limits' of ports established a three-tiered hierarchy of ports through which the coastline of England and Wales was partitioned. The main administrative maritime centre, or Head Port, at which the Patent Officers were based, imposed a jurisdictional hegemony over subject member ports, at which deputies presided, and where overseas trade was lawfully permitted and recorded in separate and discrete Port Books. Below these were many subordinate creeks and lesser havens, where overseas trade could not be conducted without especial sufferance of the immediately superior Customs house, but coastal trade, under the supervision of lesser Customs officials, had time out of mind been permitted.[30]

However, the system appears to have been ambivalently applied.[31] In the Bristol Channel, the hierarchy of ports reflected traditional patterns of trade. Table 1.1 describes the Customs division of the Bristol Channel in c.1700. At this time, the region contained 7 Head Ports, 8 member ports (for which independent coastal Books were kept), and 9 creeks, the trade of which filled discrete sections within the subject Books of the greater Ports.[32]

Table 1.1: The ports of the Bristol Channel in c.1699.

Head Port	Member Port	Creek with separate section	Other Creek/ Unacknowledged haven
BRISTOL			Pill[33]
			Uphill[34]
GLOUCESTER			Severn/ Avon Ports[35]
		Newnham	
		Berkeley[36]	
BRIDGWATER			Combwich[37]
			Highbridge
	Minehead		Watchet
			Porlock
BARNSTAPLE			Fremington
		Bideford	Clovelly
			Northam
			Appledore
	Ilfracombe		Combe Martin
			Lynmouth
PLYMOUTH + FOWEY[38]	Padstow		Boscastle
			Port Isaac
			Wadebridge
	St. Ives		St. Agnes
	Mounts' Bay (Penzance)		
MILFORD			Pembroke
			Haverfordwest
	Carmarthen[39]	Llanelli	
		Tenby	
		Cardigan	
		Aberdovey	Aberystwyth
CARDIFF			Newport[40]
	Aberthaw[41]		
			Caerleon
			Penarth
			Sully
	Swansea		Oystermouth
	+ Neath		Port Eynon
		South Burry[42]	
		Newton[43]	
	Chepstow		Wye ports[44]

Some historians have argued that such port lists were 'ossified', and that tensions occurred between economically developing subordinate ports and commercially depressed Head Ports.[45] However, the table conceals a flexible and organic system. For example, in 1558, the Devon ports were grouped under the joint jurisdiction of Exeter and Dartmouth. In 1672 the northern coast was placed under the authority of the newly created head port of Barnstaple.[46] The superintendence of the erstwhile member port, Ilfracombe was similarly arrogated to Barnstaple, which retained its direct supervision over a number of formally unrecognised local creeks, the largest and most commercially important of which was Bideford. None the less, Bideford's development, particularly in the transoceanic and Newfoundland trades, called its subordinate status into question.[47] By 1707, Bideford Customs House was sending up its own Port Books to London.[48]

However, the re-drawing of the limits of Barnstaple caused problems. Much confusion existed as to the status of the many minor creeks of the Taw-Torridge estuary assigned to the head port or to Bideford. Clovelly, a small but not insignificant port nominally within the limits of Bideford, was recorded without distinction amongst the Bideford returns. Between 1695 and 1704, Clovelly boats accounted for some 4% of all voyages recorded at Bideford.[49] However, trade bound for Fremington and Braunton was recorded within Barnstaple's entries, whilst the trade of Northam, Instow and Appledore was arrogated to both Barnstaple and Bideford. Of these ports, Northam possessed considerable harbour facilities and a flourishing coastal trade.[50] The Port Books of Milford, Carmarthen and Swansea & Neath emphasise that much trade carried in Northam boats was bound for Northam quay itself, and it appears that many masters of boats 'of' Northam were resident in the village.[51] However, shipments were recorded under either the Barnstaple or Bideford sections in Barnstaple's Port Books, thus emphasising trade at the established ports. Similarly the status and trade of Appledore was variable, and contravened accepted notions of port limits. Both Bideford and Barnstaple claimed jurisdiction over the port and fought a protracted legal battle to enforce this.[52] From internal evidence Appledore cargoes were generally

recorded under Bideford.[53]

The relation between smaller creeks and head and member ports responsible for the keeping of coastal Port Books is central to the analysis of the coastal trade. As Andrews intimated, the failure to distinguish between the trade of individual ports that collectively constituted a given Port Book can lead to confusion and misinterpretation. His example of the trade of Margate contained in and subsumed under the Port Book of Faversham has implications for the north Devon ports, although Margate's trade was larger and the failure to recognise its extent more dangerous.[54] Similarly, as Table 1.1 reveals, many Bristol Channel creeks, often little more than sheltered inlets, were not contained within the official three-tier organisational schema. Although they remained important to local economies and often possessed highly developed port functions and installations, their trade could go unrecorded. Even when a record was kept, it could be contained within the Port Books of nominally superior ports, causing problems in separating out the trade of constituent ports. Such difficulties have been demonstrated by Wakelin with reference to the erratic recording of the trade of Newnham and Berkeley, estuarine creeks of Gloucester, within the main Gloucester coastal Port Books.[55]

The relation of creek to superior port can best be studied where local petty customs - tonnage, anchorage, moorage, pontage, quayage and associated harbour dues - exist alongside formal Exchequer Port Books. Such records provide a corroborative and occasionally more comprehensive account of the level of trade.[56] For example, the Somerset ports of Porlock and Watchet were attached to Minehead yet conducted a vigorous and independent coastal trade in coal and culm with south Wales and, in the case of Watchet, in staple goods, overseas commodities and consumables with Bristol. By the early eighteenth century, both ports invested heavily in harbour improvement schemes, and Watchet petitioned, unsuccessfully, for the status of a staple wool port.[57] However, an analysis of the Minehead Port Books indicates that the trade of Porlock and Watchet is collated with that of the superior port. In most historical works, this distinction has not been appreciated, with the result that the commerce of Minehead has

tended to be exaggerated at the expense of its subject creeks.[58]

A rough approximation of Watchet's trade can be made by reconstructing the reciprocal voyages recorded in the Port Books of other centres. However, such a composite record would be overly time consuming to construct and would by no means provide a consistent index of trade.[59] Similarly, an idea of Watchet (and indeed Porlock) cargoes embedded within the Minehead record can be gauged by assessing the number of boats 'of' each 'home' port.[60] Between Midsummer 1699 and Midsummer 1700, 475 voyages were recorded in the Minehead Books of which 194 were undertaken by vessels 'of' Watchet, by far the largest of the home ports, and 22 by craft 'of' Porlock.[61] Although this may indicate the provenance or direction of some shipments, it remains a largely arbitrary method of assessing the latent commerce of creeks obscured within the record of superior ports.[62] None the less, a detailed account of dues imposed by statute upon all vessels using Watchet in order to fund extensive but abortive harbour improvement survives from 1708.[63] From Lady Day 1709 to Michaelmas 1719, when the duties were transferred to private farm,[64] a total of 1,729 vessels were recorded as entering or clearing Watchet, of which 40 were in ballast, and thus subject only to the port tax of keelage, and six were carrying overseas cargoes.[65] The mean of 153 coastal shipments per year, even accounting for purely local consignments within the port bounds, represents around a third of the recorded entries in the coastal Port Books of Minehead.[66] It is clear that Watchet was trading on a major scale and the Minehead Port Book must be used to indicate the trade of an area than that of a port nucleus.

Historians must also be sensitive to the conditions that underpinned the compilation of coastal Port Books if misinterpretation is to be avoided.[67] For example, when the port of Cardiff was established in 1559, it enjoyed the superintendence of the coast from the river Wye to Worms Head, with deputy administrations set up at Chepstow and at the joint member port of Swansea and Neath. However, by the later seventeenth century, Cardiff's jurisdiction was residual; both member ports had far outgrown the commercially stagnant centre.[68] In 1700, Chepstow 'being a growing

place in trade', was separated from its erstwhile headport,[69] and by 1735 Swansea and Neath had been disaggregated, the Cardiff Customer noting that Cardiff was the 'most inconsiderable port for trade' in south Wales and both the former members had 'ten times the trade we have'.[70] Behind such changes lay the persistent problem of to which Customs house creeks within the Cardiff administration 'belonged'. Swansea held administrative sway over Oystermouth, 'Mumbles' and Port Eynon, the trade of which was undifferentiated in the Port Books.[71] Cardiff itself exerted control over the ports of the Usk,[72] a number of coastal inlets including Penarth and Sully,[73] and Aberthaw, which maintained a trade in livestock and agricultural goods with the south-west of England. At such centres, deputy coastwaiters, itinerant riding officers, and local boatmen were maintained to oversee and record coastal trade.[74] However, such is the paucity of entries in the coastal Books of Cardiff, it appears that most voyages emanating from the creeks were simply not recorded.[75] What is more the status of Aberthaw is doubly problematic. Ostensibly tied to Cardiff, Aberthaw was recorded sporadically in separate sections within the Swansea and Neath Port Books.[76] Whilst this practice had ended by 1693, there was no compensatory increase in entries recorded under Cardiff, although evidence from Aberthaw's trading partners reveals the continuation of trade.

There is also some confusion as to whether shipments passing between Head port, member port and creek contained within the superintendence of a single port jurisdiction were consistently recorded. Wakelin has echoed Johnson in arguing that trade remaining within the geographical limits of the port of Gloucester escaped record.[77] This included not only river trade which did not pass the customs 'threshold' of Gloucester, but also trade that passed between the estuarine creeks and the Severn.[78] Such local inter-port trade was prevalent in the geographically dispersed administrations of the Bristol Channel. When boats passed between ports under the same head port jurisdiction, the shipment was recorded in the Port Book *as long as* the boat moved between discrete record-keeping centres. Thus, shipments from Barnstaple, the Head port, to Ilfracombe, a Member port endowed with its own independent

administration, were regularly recorded. However, shipments between Barnstaple and Bideford, its creek, were omitted, because, like Gloucester, the shipment did not traverse the bounds of the record-keeping Customs house.[79] In the case of Carmarthen, a member port of Milford exercising superintendence over Llanelli, Tenby, Cardigan and Aberdovey, shipments between the four creeks and the superior port were habitually recorded within the same Port Book. In such instances the record is particularly full and the internal integrity of the Port Book from section to section can be readily assessed.

iii. Coastal Port Books and the trade of the region.

In general, the techniques used for compiling the coastal Port Books of the Bristol Channel differed only slightly from general customs practice. As Crouch, Willan and Hoon have outlined, at each port the Customer and Controller, or their appointed deputies, recorded in the official Exchequer Book full itineraries and cargo lists of customable voyages clearing and discharging coastwise in the coastal Port Books.[80] However, these Books represented summary enumerations or 'fair copies' of a more elaborate system of local Customs administration existing parallel to the formal Exchequer record.[81] Separate records were kept by a plethora of lesser functionaries. Coastwaiters were appointed to ensure 'that the colour of bringing or sending one sort of Goods *coastwise*...may not be fraudulently imported or exported', boatmen and riding officers patrolled the coastline preventing the running of 'prohibited or uncustomed Goods',[82] and coal meters and excise officials were appointed to oversee independent accounts of taxable commodities.[83] Crouch confirms that 'though all Goods coming and going coastwise by Cocket, are enter'd in the Books kept in the Custom-House; yet they must be likewise enter'd in a Parchment-Book, which the Court of Exchequer sends to the Patent Officers in every Port, and to their Deputies at every Creek within this Kingdom ... under the Exchequer-Seal, inclosed in a Tin Box, with the leaves number'd: Which Book is called the King's Majesty's original Book'.[84] This record

noted `the Name of the Ship, the Master, the Goods, the Port of Landing, and the Date of the Certificate of Return ...not only where the Goods are all landed at one Port, but likewise where the Vessels discharge at several Ports; and to enter together in one Part of the Book, all Goods *going out*, and in the other Part, all Goods *going in*'.[85] The fact that the local 'Books kept in the Custom-House' have not survived, makes these 'official' coastal Port Books a vital source.[86]

As most commentators have emphasised, the system applied to coasting relied upon a complex device of recording and checking shipments in duplicate: at the point of unloading to assess whether discharged cargoes corresponded to outwards shipments and nationally at the end of each year by Exchequer clerks to police the procedure.[87] Before a ship moving coastways cleared its port of departure, the cargo would be 'rummaged' by the coastwaiter and a record of the boat and its schedule entered into the 'outwards' section of the relevant Port Book. The cargo would similarly be examined by excise officials who would grant 'certificates or permits' attesting to the payment of duties.[88] The procedure was secured by payment of a bond by the ship's merchant, master, or factor associated with the goods, to ensure that the consignment would progress to a stated destination, or, if economic or physical circumstances dictated otherwise, to 'some other Port or Creek' within the realm.[89] At this point a 'coquet' would be issued, providing written testimony to the legality of the shipment, for submission to officials at the port of destination.[90] Coquets were limited to 'all *Goods prohibited* to be exported out of this Kingdom, and such as are liable to any duties upon Exportation (unless the same would *not exceed 20 Shillings*)', together with all clay or earth, corn, linen, wine, brandy above one ton, and tobacco above two hogsheads.[91]

The procuring of a coastal coquet was a complex transaction. Crouch's account of metropolitan practice suggests that considerable incidental payment was necessary to oil the procedure throughout its many stages.[92] In the outports payments were more variable but on the whole far more reasonable than has been suggested.[93] With formal bonds, evidence exists to suggest that a very substantial surety was required, easily equivalent to the notional customs value of the goods if shipped abroad. For example,

from December 1691 to June 1692, Minehead recorded ten bonds of between £100 and £200 and a further surety of £600 for a cargo of wool shipped to Bristol. From December 1691 to June 1692, a further six bonds were noted, three of which specified security of £1,000 each.[94] Some confusion exists as to whether bonds were universally taken, and whether they reflected the size and value of the cargo or the status of the designated merchants. Even so, it is perhaps unwise to dismiss the absence of record of bonds as evidence of 'the regularity of trade (or) the familiarity of the merchants'.[95] As Crouch emphasised, the coastal Port Books were intended to be supported by the (annulled) coast bonds when remitted to London.[96]

On discharging, a vessel would undergo a similar procedure. Customs officials would supervise unloading and a detailed itinerary of the cargo would be entered into the 'inwards' section of the relevant coastal Port Book, if such a section was habitually kept.[97] Failure of a ship's master to report to customs officials, to present a fully itemised coquet, dispatch and annexed excise-permits, or to break bulk without the proper superintendence of officers, incurred punitive action.[98] In the case of coal, culm or cinders, the cargo would be inspected and weighed with 'a bond or deposit on duties' required on pain of a penalty of £100 for failing to submit to the proper authorities.[99] For other excisable goods, a separate record, attested by the master and boatswain on oath, was maintained alongside the record of coastal shipment.[100] If the coquet agreed with the shipment, and if all goods were to be discharged at the port, the master received a certificate 'in order to discharge his bond given at the Loading-Port'.[101] This would be confirmed in the Port Book in the form of a marginal note indicating that the coquet had been 'granted' and a 'return' allowed. This was often accompanied by the date of action upon which this occurred.[102] On return to the initial port of lading, the certificate was submitted as ratification of the legal completion of the shipment, the Customs clerks recording and dating the procedure. Failure to produce the endorsed coquet led to forfeiture and prosecution unless inclement weather forced the vessel overseas. Even if 'the ship be lost at sea, or is taken by Enemies, so that a Certificate of the Landing of the Goods in *Great Britain* cannot be produced; sufficient proof thereof

must be made by Affidavit ... which may be annexed instead of a Certificate of Return'.[103] Occasionally, the Port Books recorded 'windroven' cargoes,[104] or shipments where loss of documentation or cargo necessitated a sworn affidavit or oath of completion.[105] The returns, certificates or affidavits were then annexed to the Coast Bonds and delivered to the Exchequer 'in a Box sealed up with the Parchment [Port] Books', at the end of each proceeding year. However, local practice suggests a less than fastidious adherence to this requirement.[106]

The 'coquet and bond' system sufficed for most coastal shipments. However, a considerable trade passed between port and port 'without security', carried under the authority of transires, letpasses, sufferances and warrants - locally interchangeable devices which described specific forms of Customs usage.[107] Such terms were used in two major ways: authorising the localised movement of goods within head ports or, more frequently, the shipment of petty cargoes. This, as Crouch intimated, involved either '...*Small Quantities* of such goods as are *not prohibited* to be exported out of this Kingdom; and if they were to be exported, the Duties thereof would *not exceed twenty Shillings*, or else might pass *Duty free*', or low-value commodities carried in bulk where the risk of being transported abroad was diminished.[108]

The precise operation of such devices have not been widely examined. Transires may well have been applied to English wares or imported overseas goods tramped coastally, but this was only one area of operation.[109] Foreign commodities on which duties had been paid or secured could also pass by transire or letpass, and 'corn & goods not customable, nor prohibited to be exported', were to 'pass from place to place within the same port by Transire'. However, this would only be operative if such items were traded singly. If they appeared in combination with goods which were legally bound to proceed coastwise by coquet, a single unitary coquet was required.[110] As a result, letpass trade was generally confined to shipments of petty items of cargo. None the less, the extent of such traffic has not been fully appreciated. It has either been dismissed as inconsequential, or seen to affect only certain ports and certain commodities, and, perhaps most damagingly, certain periods.[111] Whilst some Port

Books assiduously recorded all forms of trade, others were confined to coquets.[112] Moreover, as transires and letpasses were paper documents that had no financial implication to Crown or shipper, their inclusion with the parchment coast bonds annually remitted to the Exchequer was not deemed necessary.[113] The express purpose of coastal Port Books was not to record all forms of domestic shipment, but to prevent the illicit overseas export of customable goods.

Furthermore, Wakelin, dealing with the coquet Books of Gloucester, has concluded that the level of latent letpass trade was minimal.[114] To Wakelin 'let passes or their equivalents, apart from a few rare instances in the seventeenth century, were not issued at Gloucester before the mid 1720s, when there was a sudden decline in the thoroughness of recording'. This is optimistic and misleading.[115] The bulk of Wakelin's evidence is derived from Gloucester's outwards trade with the Somerset ports, wherein the coquet trade matched the records of inwards shipments in the Bridgwater and Minehead Port Books.[116] This trade represented less than a tenth of Gloucester's coastal exports. Bristol, the main focus of the Severn trade, presents more problems. Like Gloucester, Chepstow and the Glamorganshire ports, Bristol recorded only coquets, and, from *1660, only outward traffic. It is thus impossible to assess* whether a reciprocal letpass trade existed between Bristol and Gloucester. Equally, it cannot be dismissed out of hand especially if the evidence of the 1656-7 Gloucester coast Book is taken into consideration.[117]

Wakelin's assessment of the under-recording of letpass voyages in Gloucester's inward trade is more assured. However, the discrepancy between the cumulative coquet and letpass trade of Bridgwater bound for Gloucester in 1699 and that recorded in the corresponding Gloucester Port Book was repeated in 1695, 1696, 1697, and 1701.[118] The fact that all letpass shipments were omitted at Gloucester confirms the assertion that the Gloucester Books seriously underestimate t tal coastal imports. Again, the limited nature of the Bristol records prevents direct comparison, and the coastal Port Books of Chepstow, the second most important trading partner of Gloucester, are similarly lacking in this respect.[119]

The 'rapid decline' of recording at Gloucester from 'the mid-1720s' has greater repercussions for the understanding of regional trade.[120] Wakelin ascribed this dramatic falling off to the 'use of both let passes and sufferances at the Gloucester Custom house', postulating that the absolute drop in voyages from Bristol 'reflected the regularity and relative safety in revenue terms of the Severn trade, as it was quite out of proportion with the decline of recording as a whole at Bristol'.[121] However, the decline was not a result of proximity or revenue safety, which were, after all, commercial constants. Instead it emanated from the transformation of the official extents, limits and bounds of the river Severn. From 1730 it was declared that for Customs purposes, the mouth of the Severn would terminate not at Gloucester but at the Holms.[122] As vessels travelling between ports above the 'cardinal point' of the Holms were not passing into 'open sea', the expensive coquet and bond system was not necessary and transires and letpasses 'without security' would suffice.[123] Under existing practice, such devices were not habitually entered in the Port Books of all the 'above-Holms' ports. Consequently, levels of recorded trade declined, except for those commodities, for example coal, salt, wool, fullers' earth and tobacco pipe clay, which demanded greater excise and Customs oversight.[124] The change in practice was noted by Willan, although its serious effects upon Port Book data were not fully realised.[125] It is also likely that the treasury warrant merely ratified informal procedures that had developed in the early eighteenth century.[126]

At Bristol the level of unrecorded letpass trade was generally small,[127] although evidence suggests that a considerable amount of voyages returned to Minehead and its creeks from Bristol with petty letpass cargoes.[128] Letpasses were not recorded at the ports under Cardiff and it is only possible to reconstruct an approximation of trade by either casual references in allied Customs sources, or the painstaking examination of the more complete Port Books of the Somerset and Devon ports.[129] The omission is most apparent at Chepstow where grindstones, millstones and timber, considerable staples of the Wye trade, were under-recorded. Similarly, the Cornish Port Books omit large quantities of stone and fish. In 1697, Mounts' Bay, a

noted centre of pilchard fishing, recorded only 17 voyages in all, the majority of which were imports of dutiable (thus coquet-bearing) cargoes of coal from Wales and charcoal from Southampton.[130] Quantitative assessments of the trade in hilling stones and rags - roofing materials quarried from around Boscastle - also suffer from the omission of letpasses. For example, hilling stones were absent from the coastal Port Books for Padstow in 1696, whereas the contemporary Bridgwater Book noted 50,000 stones and 40 hilling rags traded in five letpass shipments.[131] In 1703, 313,000 hilling stones and 100 hilling rags unrecorded in the Padstow Books were noted entering Bridgwater in thirteen letpass consignments. Historical accounts have seriously underestimated these problems. For example, Willan has failed to recognise the persistent discontinuity of recording standards between regional ports,[132] and Whetter has based a perceived shift in the trade of hilling stones from Fowey to Padstow on the evidence of similarly uncritical Port Book samples.[133]

Letpasses were also used to record high value commodities on which duty had been paid which were subsequently traded overland. Although Hoon has briefly outlined the procedure, the apparent paradox of recording overland trade in the coastal Books has generally escaped historical analysis.[134] The Bristol Channel Port Books appear to have noted surface trade sporadically and only in certain commodities. In 1699-1700, for example, Minehead recorded eight overland consignments passing by transire to Bristol, Exeter, Somerton, Taunton and London carrying mostly French cloth and Irish linen.[135] Although similar entries appear to have been recorded extensively in the Southampton and Portsmouth coastal Books, the record Port Books provide of overland trade is limited. In many cases it appears to be merely a formal record of trade to obviate any problems carriers might have in establishing that the goods transported had not been imported illegally or surreptitiously.[136]

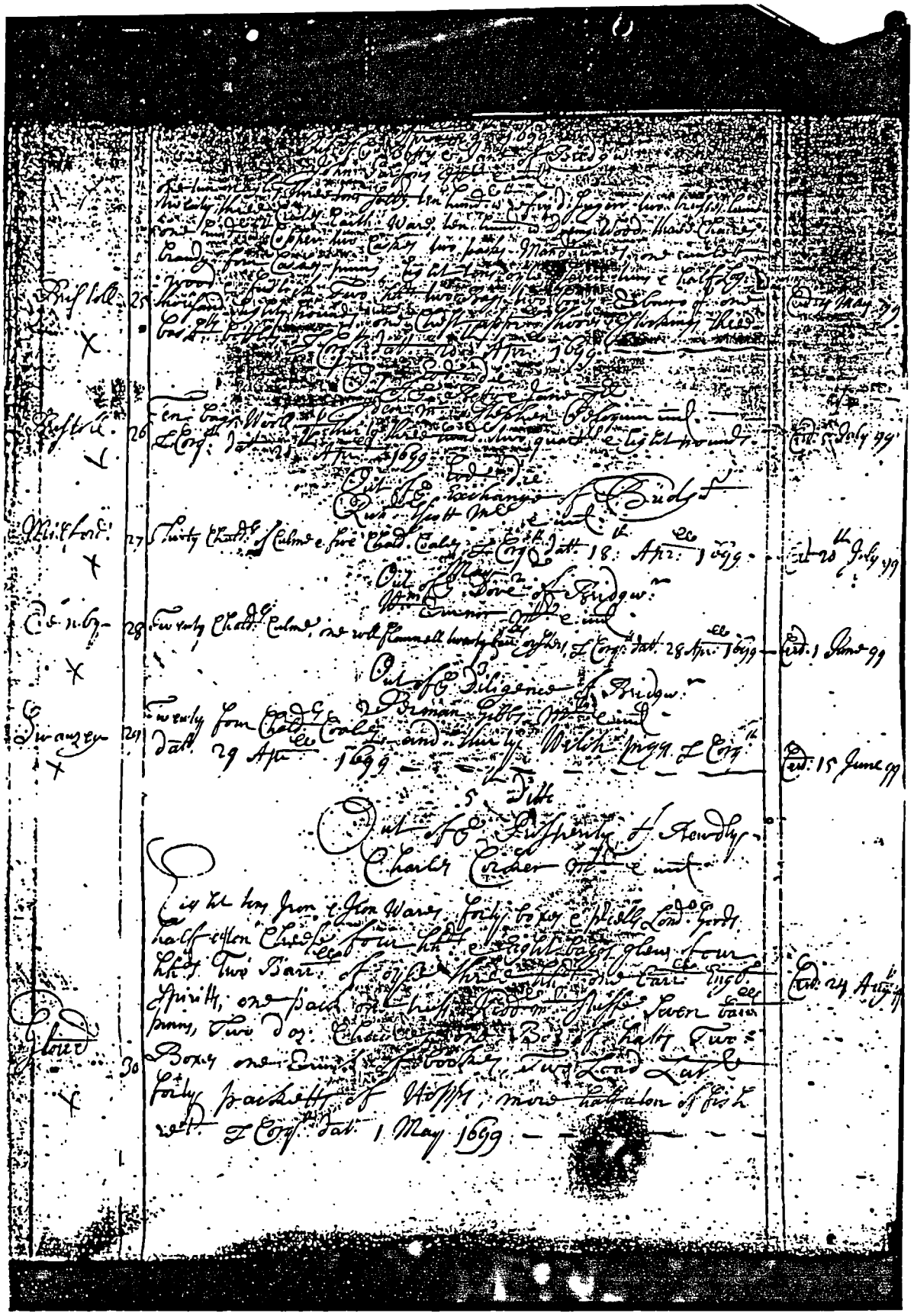
iv. Computerisation and the coastal Port Books: strategies involved in a large dataset.

Recent work has demonstrated that the development of methodologically sensitive techniques for the analysis of coastal Port Books has allowed historians to use the source in new and more effective ways. This thesis applies the pioneering work undertaken by Wakelin and Wanklyn on the Gloucester Port Book series to the more heterogeneous records of the Bristol Channel. It is not intended to repeat the structural arguments associated with disaggregating the weighty and convoluted mass of Port Book data, exhaustively covered elsewhere, but to focus upon major interpretational areas of specific relevance to the trade of the region.[137]

The main substantive problem in attempting to gather coherent data from the records is one of logistics and resources. Put simply, the source is far too voluminous to be handled satisfactorily by means other than full-scale computerisation. This is not intended to be dismissive of historians of the 'pre- computer age', or, for that matter, to undermine the quantitative basis of their work,[138] but comprehensive computerisation has made possible four important and essentially novel research initiatives that were not available to previous generations of historians. Through computerisation one is able to process, order, combine and explode vast amounts of data by whatever attribute or segment of information is desired. One also has the capacity to handle data sensitively and coherently by not imposing too rigid a data structure; experimentation with data and different combinations of data is facilitated; and the exchange of methodology and data with scholars working to agreed national standards is permitted.[139]

The data configuration established by the Portbooks Programme at the University of Wolverhampton was funded initially by the *Economic and Social Research Council* and the *Leverhulme Trust.* This has been used to provide the template for the 14 discrete databases that form the core of the research.[140] The most important feature of the databases is the organisation of data into 21 logical attributes contained in the data model. Figure 1.1 reproduces a page from the Bridgwater coastal

Figure 1.1: Page from a Bridgwater coastal Port Book, April 1699 (PRO E190 1098/5 f. 5v).



Port Book for 1699. The first entry, recording the voyage of the *Betty and Jane* of Bridgwater, is transcribed below:

Apr 29th: 1699

Out of the Betty & Jane of Bridgwr:

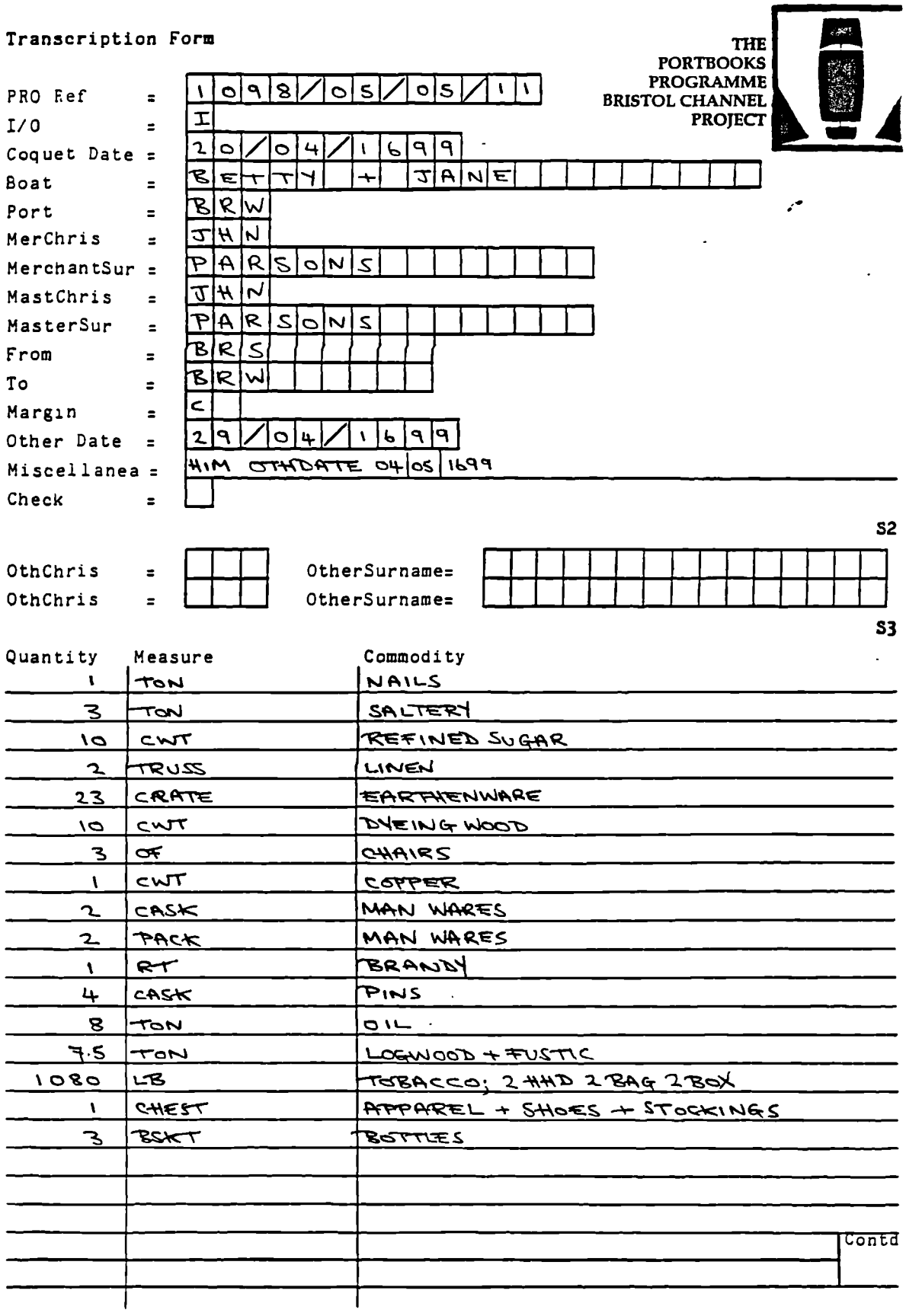
John Parsons Mr & ind.

Bristoll. Cert. 4 May 1699

One tun Nayles, three tons Saltry, ten hund wtt refin'd Sugerr, two trusses linnen, twenty three Crates Earth: Ware, ten hund wtt Dyeing Wood, three Chaires, one hund wtt Copper, two Caskes two packs Manch wares, one runlett brandy, four Caskes pinns, Eight tons oyle, Seven tuns & half Log:wood & fustick, Two hhds two Bags, two boxes Tobacco qt. one thousand eighty pounds, one Chest apprll: Shooes & Stockings, three basktts bottles p Cocqtt dat. 20th Aprl 1699.

This is translated to machine readable data format through the *Portbooks Programme* data entry form reproduced in Figure 1.2. Appendix 1 gives full details of the system by which microfilm copies supplied by the Public Record Office were transcribed onto forms by a network of volunteers and local historians.[141] It is clear that some reordering of data has taken place and that standardised spellings have been applied to boat names, to cargo measures, and to commodities. In addition, some codification has taken place to ease data input. Although the use of codes, even in such a limited way as this, has rightly been criticised as obscuring data capture, it must be remembered that the devices employed here were merely to speed up entry and query access time.[142] The attributes which have been affected most by this procedure - Christian names, measures, home ports, and ports of clearance and destination - are extended to their full, standardised versions by the commercially available relational database package, *FoxPro 2*, through which the datasets are currently manipulated.[143] Whilst standardised spelling has been used throughout - the benefits of preserving phonetic and in the case of the Bristol Channel dialect-based variants of recognised attributes are at best dubious - original spellings for merchant, master, and additional merchant

Figure 1.2: Portbooks Programme, Bristol Channel project, data entry form.



Transcription Form

THE PORTBOOKS PROGRAMME BRISTOL CHANNEL PROJECT

PRO Ref = 1098/05/05/11
I/O = I
Coquet Date = 20/04/1699
Boat = BETTY + JANE
Port = BRW
MerChris = JHN
MerchantSur = PARSONS
MastChris = JHN
MasterSur = PARSONS
From = BRS
To = BRW
Margin = C
Other Date = 29/04/1699
Miscellanea = HIM OTHDATE 04 05 1699
Check =

S2

OthChris = OtherSurname=
OthChris = OtherSurname=

S3

Quantity	Measure	Commodity
1	TON	NAILS
3	TON	SALTERY
10	CWT	REFINED SUGAR
2	TRUSS	LINEN
23	CRATE	EARTHENWARE
10	CWT	DYEING WOOD
3	OF	CHAIRS
1	CWT	COPPER
2	CASK	MAN WARES
2	PACK	MAN WARES
1	RT	BRANDY
4	CASK	PINS
8	TON	OIL
7.5	TON	LOGWOOD + FUSTIC
1080	LB	TOBACCO; 2 HHD 2 BAG 2 BOX
1	CHEST	APPAREL + SHOES + STOCKINGS
3	BSKT	BOTTLES
		Contd

surnames have been preserved.[144] A separate look-up file standardises surnames in such a way that allows flexible combinations to be maintained according to the needs of the researcher. Above all, it does not put links between surnames and standards that cannot be revised by later research.

The full database structure and the allied issue of data recognition is rehearsed in detail elsewhere and it is not proposed to reproduce this very technical discussion here. It is suffice to say that the fields or attributes isolated from Port Book data correspond to the headings supplied by the transcription form (Figure 1.2) and explained in Appendix 1. The most important feature is the *PRO call number, folio and entry number* which forms the standard and immutable reference to every entry. In addition, a hidden field, relating miscellaneous information to items of cargo, for example measurements by volume and container, is accessed by the use of a semi-colon separator after the commodity field. As Figure 1.2 reveals, many regional ports, in particular the deep-water Somerset and north Devon ports which dealt with more long-distance and diverse shipments, recorded voyages and cargoes in a fastidious and prolix way. As a result, the miscellaneous field appears unduly congested with information. This suggests that the Gloucester Books, upon which the early technical foundation to Port Books research was based, are somewhat atypical in their general terseness. In comparison to the regional datasets, the Gloucester Port Books database appears compressed. Whilst this has suggested future improvements to the 21 attribute data structure, it has not undermined the utility of the database or corrupted the results presented below.[145]

The wider sample provided by the regional Port Books emphasises two problematic issues in the interpretation of data: the significance of the 'home' port, and the occurrence of multiple dates. Because the home port was never coherently defined by statute or Exchequer regulation, it has been an area of some controversy and debate. Both Woodward and Hinton, working in the pre-1640 period, suggested tentatively that it was related to the residence of the merchant or his operational base.[146] Clearly, with the increased use of chartering in the seventeenth century, merchants quite unconnected

with a boat's given home port were implicated. This was most apparent in the case of merchant dynasties like the Alloways of Minehead and Bridgwater. Whilst the Alloways owned majority shares in their own vessels, the *Willing Mind* and the *Satisfaction*, both 'of' Bridgwater, they also maintained commercial links throughout the south and north-west, and the Severn Valley. As such they were recorded as merchants on vessels 'of' Liverpool, Ilfracombe, Watchet, Tewkesbury, Upton and Bewdley.[147] In contrast, Willan has indicated that the 'citizenship of vessels' revealed 'the place of residence of the owner or owners', or failing that a proximate place of residence, or, in the case of multiple ownership, 'the Husband, or acting and managing Owner or Owners'.[148] Williams implied the home port to be taken literally as the regular port of shipment.[149] This research emphasises the 'strong correlation', identified by Wakelin and Wanklyn in the Severn trades, between the home port and the point of departure or unloading.[150]

However, it is clear that transcriptions of home ports reflected local and often idiosyncratic Customs practice. At Carmarthen, for example, boats trading from Tenby to Ilfracombe and its creek, Combe Martin, often changed their designations according to the port at which they were offloading. Hence, the *Anne*, under William Summers, completed seven voyages from Tenby in 1697, five of which were to Ilfracombe and two to Combe Martin. On each occasion, the recorded home port reflected the given destination.[151] In the corresponding Ilfracombe Book, the superior port was habitually recorded over the lesser creek as the home port of vessels.[152] A similar situation occured in the Taw-Torridge estuary, where Barnstaple, Bideford, Northam and Clovelly alternated as the home ports for boats recorded in the Port Books. In such instances, it is clear that the home port was not, as Willan argued, the port of registration, a practice not officially ratified until 1786.[153] Indeed, the fact that by the early eighteenth century many Customs officials had ceased to record home ports in the Port Books may indicate that the designation was either problematic or confusing or both. The evidence of the Bristol Channel, however, suggests that the home port at the very least reflected the most proximate Customs House to which the masters of vessels

would have to resort on their 'return' legs. The examples quoted above demonstrate that whilst the vessels sometimes changed their home port it was not between Customs administrations. Consequently, although Port Books provide ambivalent evidence, they may be used to supplement nationally-compiled figures regarding shipping and tonnages held by the major Customs House ports.

The widely varying use of multiple dates also needs re- appraisal and modification in the light of the more extensive geographical sample. In particular, Wakelin's dismissal of the evidence of multiple and often conflicting dates of entries as `not critical to the uses of the data proposed' is misleading.[154] Whilst Gloucester recorded one, and very occasionally two dates, many of the ports of the Bristol Channel noted four or even five, each closely associated with the official oversight of the shipment. In addition to the coquet date or letpass, Customs officers often recorded dates of entry, and the dates on which certificates were granted, received, and verified.[155] Certain imported goods, such as tobacco and wine, also often carried a citation dating the provenance and the personnel involved in the original shipment. Although this is of less importance in tracking the mechanisms by which coastal trade operated, it does give substantial evidence of the movement of goods and transit times.

Using the methodology described above, the coastal trade of the Bristol Channel has been analysed. As has already been stated, the principal aim has been to reconstruct the means and mechanisms of coasting for a region from Milford to Mounts' Bay. This approach recognises that any study of coastal trade which focuses solely on a central, nodal point to the exclusion of the commercial hinterland can only present one facet of trade, a criticism that has been levelled at many studies that have used Port Books.[156] Even so, it has been possible for Wakelin and Wanklyn to construct a composite picture of Severn trade through the careful analysis of the Gloucester record alone. Although such an approach is not without problems,[157] it supplies a sufficiently comprehensive index of trade, which has been denied to scholars of Bristol as inwards traffic was not recorded after 1640. This second problem has forced a succession of

historians into relying upon either non-quantitative sources or the records of other ports to supply a sketchy overview of cargoes discharging at Bristol.[158] The solution adopted by this thesis has been to focus analysis upon the broadest possible selection of maritime centres within Bristol's immediate trading parameters. This provides a thorough context to the patterns of trade previously only explored in an ad hoc or tentative way, and allows the trade of nominally 'lesser' ports to be analysed alongside that of Bristol. However, with such an approach the problems of constructing a potentially sprawling dataset within limited research times has posed major logistical difficulties. To counter such factors, the research has concentrated upon analysing trade across a small, defined time-span rather than using samples over a much longer period to impute long-term commercial change.[159] The programme of computer-aided research has therefore been applied to a ten year bloc from 1695 to 1704.[160] As Table 1.2 indicates, a wide geographical span is combined with high levels of record extancy for most of the major ports. In comparison to adjacent periods, where the record is poor and discontinuous, at least one full year survives for all ports and, excepting the Cornish ports, over half the maximum number of Port Books are available.[161] Nevertheless, there are gaps. Apart from the Cornish ports, the survival of the Cardiff Books and those of its members, Chepstow and Swansea and Neath, is patchy.[162] Yet, in the case of many ports, and Carmarthen in particular, coverage is almost complete.

Undoubtedly, research has been conditioned by extrinsic factors such as time. However, it is motivated by the ambition to produce solid datasets from which numerical and textual evidence can be made widely available and which are not undermined by internal inconsistency. Recent work on the Gloucester Port Books has pointed to omissions in the pre-Civil Books and the marked decline of recorded shipments after the adoption of new regulations in 1730 has already been emphasised. Yet, confining research to a defined ten-year bloc is not merely a means of avoiding suspect data or poorly represented periods: it also coincides with official measures to consolidate outport administration and eradicate erratic and corrupt practice. Evidence suggests that the supervision of the coastal trade was progressively reformed from

Table 1.2: Extant coastal Port Books, Bristol Channel ports, 1695-1704 (PRO class E190/piece number).

Year	Gloucester	Bristol	Bridgwater	Minehead	Ilfracombe	Barnstaple	Padstow	St. Ives	Mounts Bay	Milford	Carmarthen	Swansea & Neath	Cardiff	Chepstow
1695 A	1252/07	1151/02	1095/10	1095/15	969/04	969/01	1055/17	1055/06	1055/24	-	1313/09	1284/06	1284/04	-
1695 B	1252/08	1153/03	1096/04	1096/01	970/04	970/15	1056/02	1056/19	1056/10	-	1313/10	-	1284/09	-
1696 A	1252/09	1153/02	1096/02	1096/05	970/14	970/13	1056/24	1056/18	1056/17	1313/19	1313/22	-	-	-
1696 B	1252/14	1154/03	1096/10	1096/07	971/12	971/02	1057/08	1057/34	1057/26	1313/18	1313/17	-	-	-
1697 A	1252/17	-	1096/08	1096/11	971/10	971/11	1057/02	1057/06	1057/23	1314/05	1314/06	-	-	-
1697 B	1253/03	-	1097/09	1097/07	972/16	972/15	1058/22	1058/03	1058/13	1314/12	1314/08	-	-	-
1698 A	1253/05	1155/01	1097/04	1097/01	972/17	972/06	-	-	-	1314/13	1314/11	1285/05	-	-
1698 B	-	1157/02	1098/03	1098/07	973/15	-	-	-	-	1314/18	1314/19	-	-	-
1699 A	1253/06	1157/03	1098/05	-	973/10	973/16	-	-	-	1314/15	1314/20	1285/12	-	1285/02
1699 B	1253/09	1158/02	1099/09	1099/01	-	801/37	-	-	-	1315/01	1315/07	-	1285/08	1285/13
1700 A	-	1158/03	-	1099/07	974/06	974/07	-	-	-	1315/10	1315/04	-	1285/09	-
1700 B	1253/12	-	1099/13	1099/16	975/08	975/04	-	-	-	1315/20	1315/15	1285/28	1285/24	1286/21
1701 A	1253/14	1159/01	1099/18	1099/12	975/09	-	-	-	-	1315/19	1315/18	1286/04	1285/22	1286/18
1701 B	1254/01	1160/01	1100/06	-	976/12	976/02	-	-	-	1316/05	1316/07	1286/01	1286/11 *	1286/13
1702 A	-	-	-	1100/01	-	976/05	-	-	-	1316/06	1316/09	1287/01	1286/10	1287/09
1702 B	-	-	-	-	977/09	977/10	-	-	-	1316/18	1316/14	1287/13	-	1287/11 #
1703 A	-	-	1100/09	-	977/03	-	1062/10	-	1062/27	1316/15	- \	1288/13	1287/07	-
1703 B	1254/05	1160/04	1101/07	-	978/02	-	1063/21	1063/34	-	1317/01	1317/02	1288/05	1287/06	1288/12
1704 A	1254/07	-	-	-	978/01	-	1063/07	1063/20	1063/33	1317/08	1317/06	1289/04	1288/08	1289/10
1704 B	1254/09	-	1101/10	-	-	980/13	-	1064/03	1064/13	1317/10	1317/16	1289/03	1288/03	1289/15
TOTAL	15	12	16	13	17	15	9	9	9	18	19	12	12	10

* Period covered according to schedule: 25/12/1700-24/12/1701

\# Also 1287/10, intended for 1697, apparent duplicate of 1287/11

\ Schedule gives 1317/17 a searchers overseas Book for Milford.

c.1684 as a result of Culliford's inquiries into abuses in the western ports.[163] Specimen entries detailing the correct way to record 'ships entring inward or clearing outward in yo[r] port from or to any other Country or Coastways' were dispatched to the Customers of the 'western ports'.[164] Customers were urged to note the 'number of Casks, bales or other packags (sic) of Goods and mentioning the Species as farr as you can from the masters reports inward and the total Quantity of the several Species at least of bulky Goods from the Cocquets of all Coasters or entry of other ships outward.' Failure to do so would result in the summary appointment of 'some other Collector who is both able & willing to practice our directions for his Ma[ties] service & the advantage of the Revenue'.[165] Furthermore, from 1688, all wool shipments were to be recorded under separate coquet and bond, thereby maintaining more effective oversight.[166] Further changes in record-keeping and the formal presentment of Port Books for official examination enhanced the efficiency of the Books as reliable accounts of shipments. From 1692 the King's Remembrancer was re-ordered to dispatch stitched parchment coastal Books to head and member ports at half-yearly intervals.[167] This had the effect of standardising practice at the outports by enforcing the treasury warrant of 1684.[168] By 1692, therefore, the practice by which the coastal Port Books were compiled had been brought within greater control; a factor which had profound implications for the integrity of the source.[169]

With these factors in mind, the research has adopted two broad strategies for computerisation. Firstly, attention has been focused upon an 'inter-war' period from 1697 to 1701 to provide an assessment of regional trade at its potentially most stable. For this period at least one complete year for all regional ports at which discrete Port Book records were kept has been computerised. The intention has been to create the broadest cross-section of records possible given the inconsistency of survival. As Table 1.3 indicates, it has been impossible to create a comprehensive single-year sample consistent with the intention to avoid years of warfare and other contingent factors such as excessively inclement weather.[170] Despite this, the thesis has concentrated upon 1699. Where records are not extant, as in the case of Swansea and Neath and the

Table 1.3: Coastal Port Books used for the sample year.

Port	*Books (PRO No.)*	*Date (From/To)*	*Entries*	*Illegible entries*	*Illegible Attributes*
Gloucester	1253/06 1253/09	Dec. 1698 Dec. 1699	664	12	22
Bristol	1157/03 1158/02	Dec. 1698 Dec. 1699	504	6	10
Bridgwater	1098/05 1099/09	Dec. 1698 Dec. 1699	439	1	1
Minehead	1099/01 1099/07	Dec. 1699 June 1700	496	0	0
Ilfracombe	0973/15 0973/10	June 1698 June 1699	175	6	6
Barnstaple	0973/16 0801/37	Dec. 1698 Dec. 1699	625	119	512
Padstow	1057/02 1058/22	Dec. 1696 Dec. 1697	157	7	15
St. Ives	1057/06 1058/03	Dec. 1696 Dec. 1697	94	5	41
Mounts Bay	1058/23 1058/13	Dec. 1696 Dec. 1697	17	2	3
Milford	1314/15 1315/01	Dec. 1698 Dec. 1699	508	32	113
Carmarthen	1314/20 1315/07	Dec. 1698 Dec. 1699	471	16	73
Swansea & Neath	1286/04 1286/01	Dec. 1700 Dec. 1701	981	8	9
Cardiff	1285/08 1285/09	June 1699 June 1700	36	0	0
Chepstow	1285/02 1285/09	Dec. 1698 Dec. 1699	410	4	4
Liverpool	1360/16 1361/03	Dec. 1698 Dec. 1699	519	10	14
		Total	6096	228	823

Cornish ports, the most proximate full year has been computerised. Although this necessarily renders some data chronologically discontinuous, it does not materially hamper the analysis of the regional coastal trade. Even where patchy survival has rendered the sample incomplete, the degree of intra-regional trading which took place in the confined coastal seaboard of the Bristol Channel renders an informed reconstruction of trade practicable.

Table 1.3 describes the Port Books used indicating the level of illegible entities and data attributes associated with each port. In addition to the records of the Bristol Channel ports, the coastal Port Books for Liverpool in 1699 have also been computerised. This permits inter-regional comparison as well as providing data on the trade in Cheshire white and rock salt, the most important extra-regional trade in this period. Unlike the records sampled by Wakelin, where legibility and tractability were important considerations, this approach has had to accommodate a rather higher incidence of imperfect data not amenable to thorough checking and cross-analysing.[171] For most Books, illegible data are confined to the cropping of marginal customs marks or additional dates. Rarely have cargoes been affected, although one vermin-attacked Barnstaple Book is in poor condition.[172] In such cases reconstruction has been possible by comparing damaged records with the reciprocal entries in other Port Books.[173] As a result, only in a very small proportion of the records sampled, (less than 4% of the 6,096 entries), contain illegible data.

To test the integrity of the c.1699 sample and to provide a more coherent context for the study of regional coasting, a second strategy has been adopted. This has involved computerising the records of at least one major port or substantial creek under the superintendence of each regional headport for the entire ten year period. The intention has been to identify the most reliable Port Books whilst retaining an extensive geographical coverage. Thus, records that were manifestly incomplete or internally inconsistent have been disregarded. For example, the Minehead Books were excluded from the longer sample because of poor legibility and the problems involved in distinguishing between constituent ports. Similar problems were apparent in other Port

Book series: Cardiff omitted its creeks; both Swansea and Llanelli noted the destination of shipments very erratically; at Barnstaple and Carmarthen key data were excluded, such as the home port;[174] and at Chepstow, cargo lists were contracted into an administrative shorthand.[175] The more peripheral ports - Mounts' Bay, which was insignificant in terms of Port Book records, and Milford the largest culm exporting centre of south Wales - were discounted from the longer sample because the bulk of their trade remained beyond the commercial parameters of the region.[176] Thus, the longer sample comprises the records of Bristol, Gloucester, and Bridgwater, the three most important centres within the region, together with the coastal Books for Bideford (the burgeoning creek of Barnstaple); Padstow (the largest port in north Cornwall); Tenby (the important coal exporting creek of Carmarthen); and Neath (the joint member port with Swansea of Cardiff headport). Care has been taken to ensure that the survey is rigorous, as complete as possible, and that arbitrary selections have been excluded. Hence, all extant records, even half years isolated from the main sample, have been computerised. This is particularly important for the later Bristol Books and the early Neath records, where poor extancy has heightened the significance of the surviving record.

The extent of the longer sample of records is presented in Table 1.4 with an assessment of the number of illegible entries and attributes attached to each year. In most cases the extensive mechanism of cross-checking and final ultra-violet examination of the original records has reduced irretrievable data to minor levels. However, the poor condition of certain Books has posed severe problems. Thus, cropping and damage by water and vermin has rendered over a quarter of the entries in the Gloucester Port Book for the second half of 1695 either partially or wholly illegible.[177] The early records for Neath are also badly damaged, and only the first half of the Tenby record for 1704 has been computerised as the Port Book was too imperfect to be reproduced.[178] Even so, 15,283 entries have been computerised of which only 500 (or some 3%) contain illegible data. Undoubtedly, computerising all 186 surviving Port Books would have made data linkage more comprehensive. However, this would

Table 1.4: Ports and records sampled, 1695-1704.

		1695	*1696*	*1697*	*1698*	*1699*	*1700*	*1701*	*1702*	*1703*	*1704*	*Total*
Gloucester	Entries	556	572	634	280 |	*	292 #	580	-	290 #	610	3814
	Illeg Entries	84	2	7	1	*	5	1	-	1	4	105
	Illeg Attributes	526	2	24	1	*	11	1	-	1	17	583
Bristol	Entries	441	394	-	462	*	231 |	427	-	239 #	-	2194
	Illeg Entries	9	4	-	11	*		12	-		-	36
	Illeg Attributes	12	11	-	13	*		29	-		-	65
Bridgwater	Entries	457	361	526	390	*	251 #	432	-	442	236 #	3095
	Illeg Entries	11	6	1	5	*	2	5	-	2	3	35
	Illeg Attributes	36	14	1	8	*	2	22	-	5	4	92
Bideford	Entries	260	249	229	113 |	*	332	135 #	282	-	199 #	1799
	Illeg Entries	1	0	1	0	*	16	30	2	-	0	50
	Illeg Attributes	3	0	1	0	*	17	46	2	-	0	69
Padstow	Entries	114	146	*	-	-	-	-	-	134	73 |	467
	Illeg Entries	22	5	*	-	-	-	-	-	19	0	46
	Illeg Attributes	32	16	*	-	-	-	-	-	29	0	77
Tenby	Entries	257	226	235	198	*	254	286	238	91 #	149 |	1934
	Illeg Entries	4	11	2	3	*	45	70	0	9	3	147
	Illeg Attributes	4	12	3	3	*	64	105	0	14	4	209
Neath	Entries	162 |	-	-	174 |	206 |	206 #	*	387	402	443	1980
	Illeg Entries	36	-	-	9	24	0	*	6	4	2	81
	Illeg Attributes	82	-	-	12	31	0	*	7	4	2	138

* Sample enumerated in Table 1.3.

| Half year, December to June.

Half year, June to December.

have caused duplication and have been quite unfeasible given the constraints of time and resources. As it stands, the combined single-year and ten year survey has computerised 113 Books either in full or in part.[179] Through such means over 21,000 entries containing approximately 1 million attributes have been computerised.[180] This compares very favourably with similar attempts to create viable frameworks through which large historical datasets can be analysed.[181]

v. Conclusion.

This chapter has discussed the methodological structure of the study and emphasised the comprehensiveness of the approaches taken given the very real constraints of time and resource management that forms an integral if unseen part of any major research programme. These strategies have enabled a broad matrix of Port Book evidence to be constructed, through which complex forms of data analysis can be extended.[182] The following chapters explore some important pathways through the mass of data made available by computerisation. However, given the size of the datasets, only a few, selective vistas have been examined, even though the means by which Port Book data can be ordered, interrogated and analysed allows for a multitude of investigations.

Much emphasis has been placed upon the interpretation of Port Book evidence and the mechanistic ordering and sorting of data. Yet, the coastal Port Books should not be seen merely as a mine of accessible quantitative material awaiting the imposition of an advanced schema of computer-aided analysis. The programme of extensive, flexible and painstakingly faithful transcription and computerisation, however comprehensive this may be in design and consistent in implementation, can never do full justice to the intricacies of the source. To base one's conclusions solely upon the integrity of such methodologies would be a mistake. Indeed, techniques which neither convincingly examine the theoretical and practical conditions under which the system by which the coastal Port Books were compiled nor make allowances for erratic recording standards can be dangerously misleading. To overcome this the research has

adopted a broad front by analysing regional patterns of coasting rather than either the trade of one port or linear patterns of growth or decline. Port Books have, of course, been widely used to supply information about regional systems of coasting, but such studies have tended to be too selective in terms of the goods studied or too limited spatially to offer more than a cursory analysis of trade.[183] The extensive geographical sweep of the study and the methods taken to ensure the widest possible contextual background have been an attempt to correct these imbalances, themselves the partial result of handling a complex and sprawling source using manual means alone.

There is perhaps a danger with novel, technically complex research in glorifying, in Professor Fogel's words, the 'methodological hall-marks', by elevating technique above critique.[184] This study seeks to employ quantitative data sensitively and not to inhibit research by imposed methodological or 'statistical' constraints.[185] To do so would be to remove the often chaotic human element from the study of coastal trade and commerce - an element that perhaps can only be gleaned from the more anecdotal forms of evidence that have always formed an important part of regional economic surveys. As Chapters 4 and 5 demonstrate, the synthesis of Port Book data with other sources allows a more intelligible picture to be drawn of how coastal trade in the Bristol Channel was conducted.

The economic historian is no poet, yet if Bristol could be described by a contemporary rhymester as the centre,

> 'Whose Oozy Banks with two great Streams inlaid
> And Naval Strength alternately convey'd
> Command the Staple of the Western Trade'[186]

it is only perhaps through the teasing out of the full spectrum of trade within its coastal and riparian hinterland that such verbose eulogies can be tested. Computerisation of the region's coastal Port Books provides the framework through which this can be best achieved.

Chapter 2: Voyages and connections in the Bristol Channel: the vectors of trade.

The late Neville Williams once advised historians to beware the seductions of 'figures' gleaned from erratic pre-industrial sources masquerading as bona fide 'statistics' or used for 'statistical purposes'. If anything, his warnings have more resonance today when powerful personal computers have liberated many sources from the straitjacket of intractability. Historians are now much more able and often more willing to submit such sources to the types of quantitative analysis enabled by the computer. The object of Williams's critique was the modernist paradigm by which faith in numerical representations of the past is anachronistically superimposed upon the scrappy survivals of an earlier, less precise age. The use of Port Books was not exempted from this. According to Williams, they are 'not the material on which a statistical account of the volume of trade can be based', although he admitted that, used carefully, they formed 'the chief source for the history of trade', and that 'the figures for the coasting trade are generally nearer the truth than those for foreign trade'. Leaving aside the issue of historical truth, Williams's scepticism raises an important issue. If we are to be wary of ever acquiring absolute figures from the Port Books - and it must be remembered that Williams was concerned with the more erratic sixteenth century Books and *with the problems of smuggling - how can we adequately* study a major sector of internal trade? Clearly, as we have no other comparable or extensive source, Port Books cannot be casually dismissed, and it is the job of the historian of coastal trade having appraised the source to provide logical and comprehensive pathways through the conflicting mass of Port Book data. Thus, whilst this Chapter broadly accepts Williams's caveats, it also emphasises the importance of coastal Port Books in providing 'details as to the directions of trade, merchants' names, the kind of cargoes ... imported and exported, and certain other important ... facts about trade and shipping'; data acknowledged and used by Williams himself.[1]

The first and in many ways most wide reaching uses to which Port Book

evidence can be put is in investigating the 'directions of trade' - the network of voyages that bound the ports and creeks of the Bristol Channel into an coherent system of coasting. However, in constructing a quantitative pattern of trade along these lines, the historian has to devise a consistent standard measure of trade. For example, the total number of voyages, the total tonnage carried, the number of vessels employed, and the approximate tonnage of these vessels are all acceptable measures of coastal traffic and have been adopted by historians as variable indices of trade. The need to compress research into manageable and transferable standards is reflected in other branches of internal trade. Historians of road carriage, for instance, have concentrated upon the number of weekly services connecting provincial towns to London.[2] This has provided a workable, if controversial index by which the expansion in the provision of overland transport can be estimated.[3] However, the most practical unit by which the pattern and frequency of coastal linkages can be assessed is by calculating the number of voyages recorded clearing and entering regional ports. This provides a base index for assessing the principal directions of trade and the mechanisms through which coasting in the Bristol Channel was facilitated. Although this is only one of the many potential enquiries to which the Port Book databases can respond, it establishes a structure through which more complex analyses of coastal trade can be interpreted.

i. Port Book entries, coastal voyages, and the ports of the Bristol Channel.

In focusing upon the voyage as the standard unit of analysis, the research has highlighted an important interpretational distinction: the number of shipments entered into the Port Books often exceeded the number of recorded voyages. It has, therefore, been necessary to distinguish between the principal voyage of a particular vessel and other associated entries in the Port Books relating to additional cargo items or different systems of Customs documentation. By far the most common incidence of this practice of double entry occurred in the way wool was recorded.[4] From the Act

of 1688 onwards all domestically produced or Irish grown wool or untreated wool fells had to be traded coastwise under a separate coquet and bond.[5] This legislation translated slowly to practice, yet by 1692 most Bristol Channel centres had adopted the double-entry mechanism by which wool was recorded separately.[6] Spanish wool, by contrast, passed undistinguished under general coquets.

However, wool coquets were only one instance of double-entry. Even in the highly consistent Gloucester Port Books, cargoes were occasionally broken down according to the merchant responsible for each commodity. In such instances multiple yet discrete entries were transcribed by customs clerks for a single voyage.[7] More significantly, many regional ports adopted practices by which two entries were recorded when shipments under the regular coquet and bond system carried supplementary cargo under the inferior authority of letpasses, transires, sufferances or warrants. This occurred in two main instances. Boats tramping from port to port sometimes picked up goods carried under letpasses in addition to their main cargo of coquet-certified goods. In long-distance coasting where stopovers were both likely and often unavoidable, this was a marked feature of coasting. For example, Severn trows carrying salt and miscellaneous merchandise to Bridgwater occasionally procured ancillary letpass cargoes, often glass or glass bottles from Bristol.[8] In contrast, where goods were normally traded by letpass - small quantities of dutiable imported wares, salvage and prize goods, or domestically produced commodities of low value - the carriage of additional goods requiring a coquet prompted Customs clerks to make separate entries. Sometimes, additional letpass cargoes were associated with coquet *and* wool coquet entries, each of which was recorded discretely.[9] Such practices were confined to the records of the more well-administered ports but, although evidence suggests that such procedures were widespread, they have not been generally recognised by historians of coastal trade.[10]

The practice adopted for isolating double entries, summarised in Appendix 1, provides the methodology underpinning Table 2.1. This indicates the number of voyages recorded at each Bristol Channel port for the sample year, distinguishing

Table 2.1: Entries and voyages recorded, Bristol Channel Port Books, sample year.

Port	Entries	Coquets	Letpasses/ equivalents	Wool Coquets	Associated Letpasses	Voyages
Gloucester	664	664	-	28	-	626
Swansea	531	531	-	-	-	531
Milford	508	489	17	-	2	506
Bristol	504	491	-	13	-	491
Minehead	496	310	165	18	3	475
Neath	437	437	-	-	-	437
Bridgwater	439	370	56	8	5	426
Chepstow	410	410	-	-	-	410
Barnstaple	323	277	43	3	-	320
Bideford	302	252	45	3	2	297
Tenby	186	182	4	-	-	186
Ilfracombe	175	87	88	-	-	175
Padstow	157	157	-	-	-	157
Cardigan	110	110	-	-	-	110
St. Ives	94	94	-	-	-	94
Llanelli	81	81	-	-	-	81
Carmarthen	77	62	11	3	1	73
Cardiff	36	31	-	5	-	31
Mounts Bay	17	17	-	-	-	17
Aberdovey	17	17	-	-	-	17
South Burry	13	13	-	-	-	13
Liverpool	519	463	56	-	10	509
	6096					5982

between recorded coquets and letpasses (and their equivalents) and separating out associated wool coquets and additional letpasses. It is important at this stage to stress the diversity of recording practices outlined in Chapter 1. The major letpass recording ports - the head ports and creeks of Bridgwater, Barnstaple, Milford and Liverpool - are emphasised to the relative detriment of those ports that only recorded coquets.[11] Because of the large share of trade enjoyed by the exclusively coquet recording ports, trade conducted under letpass appears minimal, accounting for less than 8% of the total sample. However, it is possible that substantial levels of non-coquet trade went unrecorded, and that comparisons of such attributes may therefore contain significantly variable elements.

A rather more complete picture of the volume of trade and the stability of recording practice is provided by an examination of the wider chronological series presented in Table 2.2. The Table summarises outwards and inwards trade, where recorded, for the principal regional ports between 1695 and 1704. For the purposes of this analysis, half years have been excluded from the analysis and voyages have been separated from entries using the methods outlined above. Of the 11,985 entries, 11,607 voyages and 378 second coquets and letpasses, collectively grouped as 'duplicates', have been identified. Two important points are demonstrated by the data. Firstly, although the overall representation of letpasses is disproportionately small, owing to the number of ports which only recorded coquets, their use is contextualised. Letpasses formed around 18% of recorded coquets at Bridgwater, 22% at Bideford, owing to the extensive trade in earthenware, and 5% at Tenby, where letpass traffic was confined to inwards shipments and was thus dwarfed by shipments of culm clearing the port under coquet. This suggests that for those ports which did not record secondary forms of Customs documentation, a corrective figure of between perhaps 10 and 15% of the total levels of trade must be applied. This would then account for the latent, non-coquet trade that was literally let to pass unrecorded.

The Table also reveals that the number of duplicate voyages remained generally stable over the ten year period. At Gloucester and Bristol, wool coquets

Table 2.2: Voyages recorded at Bristol Channel ports, 1695-1704 (full years only).

		1695	1696	1697	1698	1700	1701	1702	1703	1704	Total
Bristol	Coquet	441	394	-	462	-	427	-	-	-	1724
	Letpass	0	0	-	0	-	0	-	-	-	0
	Dups	11	11	-	17	-	15	-	-	-	54
	Voys	430	383	-	445	-	412	-	-	-	1670
Gloucester	Coquet	556	572	634	-	-	580	-	-	610	2952
	Letpass	0	0	0	-	-	0	-	-	0	0
	Dups	32	48	42	-	-	29	-	-	29	180
	Voys	524	524	592	-	-	551	-	-	581	2772
Bridgwater	Coquet	420	308	473	325	-	338	-	346	-	2210
	Letpass	37	53	53	65	-	94	-	96	-	398
	Dups	20	23	29	14	-	14	-	12	-	112
	Voys	437	338	497	376	-	418	-	430	-	2496
Bideford	Coquet	212	195	197	-	284	-	219	-	-	1107
	Letpass	48	54	32	-	48	-	63	-	-	245
	Dups	4	9	6	-	4	-	3	-	-	26
	Voys	256	240	223	-	328	-	279	-	-	1326
Padstow	Coquet	144	146	*	-	-	-	-	134	-	424
	Letpass	0	0	*	-	-	-	-	0	-	0
	Dups	0	0	*	-	-	-	-	0	-	0
	Voys	144	146	*	-	-	-	-	134	-	424
Tenby	Coquet	237	218	235	182	245	267	228	-	-	1612
	Letpass	20	8	0	17	9	18	9	-	-	81
	Dups	0	0	0	0	0	1	1	-	-	2
	Voys	257	226	235	198	254	285	236	-	-	1691
Neath	Coquet	-	-	-	-	-	*	387	402	443	1232
	Letpass	-	-	-	-	-	*	0	0	0	0
	Dups	-	-	-	-	-	*	0	1	3	4
	Voys	-	-	-	-	-	*	387	401	440	1228

* data presented in Table 2.1 Total Voyages 11607

were a small but significant proportion of recorded voyages, although rather more double coquets were issued at Gloucester in 1697. This may indicate that in this year wool was carried in addition to other coquet goods rather than proceeding by itself as was generally the case, or that more formal links with Bridgwater may have temporarily inflated the amount of wool traded coastally.[12] Similarly, the paucity of wool coquets is demonstrated for Padstow and, more surprisingly, for Tenby and Neath, given the pastoral nature of the south Wales hinterland. Second letpasses only appeared at Bridgwater and Bideford, and were normally associated with small wares tramped from the south coast ports. At both centres there were rarely more than three such occurrences annually.

Tables 2.1 and 2.2 posit important questions as to which ports were most commercially active. Table 2.1, in particular, constructs a functional hierarchy of ports based upon the number of voyages recorded in the respective coastal Port Books. This emphasises recorded occurrences: it does not assess tonnages carried or impute relative value to the cargoes handled by each centre. A letpass shipment of herrings from Ilfracombe, for example, has the same representational value as a multiple cargo of high cost overseas and domestic comestibles and consumer goods clearing from Bristol. Evidently, such a disparity is blurred by the Table. However, such criticisms do not undermine its value in providing a basic index through which the frequency of trade can be compared to the more commonly applied rank/size measures of comparative urban standing.[13] The disaggregation of cargoes by species is addressed more thoroughly in Chapter 3.

Using this index, Gloucester is revealed to be the most functionally prominent port of the region, handling 626 recorded voyages in the sample year and far outstripping the other corporate towns of the Bristol Channel seaboard. In terms of its economic significance, however, Gloucester's position proceeded from its administrative role: in the main the vast majority of voyages recorded in the Gloucester Port Books emanated from or were destined for the up-river ports of the Severn.[14] In particular, Worcester, Bewdley, Tewkesbury and Shrewsbury pursued a

far more vigorous long distance coastal trade with Bristol, and in the case of the three former ports with the Somerset, north Devon and Glamorganshire coastline, than that conducted independently by the head port. This pattern was repeated at Chepstow. By the later seventeenth century, Chepstow was a minor if growing port, yet the bulk of its recorded coastal trade was derived from the industrialising and agriculturally productive hinterland of the Wye navigation. The large number of recorded voyages at Chepstow in 1699, even accounting for the absence of letpasses, reflected the through trade of commercially more significant river ports and their adjacent areas, for example, the agricultural and cider entrepot of Brockweir and the copper producing centre of Redbrook.

Of course this analysis merely confirms that towns and ports cannot be separated from their hinterlands, and that any device that seeks to apportion relative importance to urban foci without accounting for the economic inputs of the surrounding hinterlands seriously underestimates how towns functioned in the pre-industrial period.[15] Coastal centres thus acted as nodal distribution points for both local and more dispersed areas. For example, the logistical importance of Gloucester and Chepstow as interfaces to major internal transport systems was mirrored in the trade of Bridgwater, which, via the rivers Parrett and Tone and an associated road network, serviced Taunton, Taunton Deane and the cloth centres of central and south Devon.[16] Similarly important overland routes connected Minehead, Barnstaple and Bideford to the interior of the south western peninsula. Even before the Avon was improved, Bristol was acting as the distribution centre of goods brought from the Severn and Wales to the market towns of north Somerset and Wiltshire.[17] The voyages isolated for these ports thus indicate at least in part the ability of the surrounding areas to absorb and consume commodities brought coastwise. This was less so for Padstow, St. Ives and Mount's Bay where the economic and geographical limitations of the Cornish peninsula, together with the rather better access and facilities enjoyed by the ports of the southern coast, rather constricted the importance of the regional ports as marketing centres.

A third factor revealed by the Table is the central importance played by coal shipments in the trade of the region. The large number of voyages recorded at Swansea, Milford, Neath, and, to a lesser extent, Tenby and Llanelli almost entirely proceeded from the ability of the region's industries and hearths to consume regular supplies of coal and culm. Unlike the ports of the south west of England, the Welsh coal ports were neither effective redistribution points for extensive inland hinterlands, nor were they major urban centres in their own right. Pre-industrial south Wales represented an under-urbanised 'peripheral' fringe.[18] Carmarthen was recognisably a town, and, what is more, a town with genteel pretensions, but Swansea and Neath were small and shabby by English standards. Expansion was only to occur with greater mineral and metallurgical exploitation later in the eighteenth century.[19] In west Wales, Tenby was little more than a strand site, and Milford consisted of a huddle of minor settlements, creeks and landing places that acted as the collection point for Pembrokeshire culm and agricultural goods.[20]

Significantly, the analysis of voyages is most dependent upon the thoroughness with which the Port Books of the region recorded trade. Standards were highly variable, not only with regard to the fastidiousness with which all types of coquet and non-coquet voyage was recorded, but also whether Customs officials studiously noted both outwards *and* inwards shipments. Table 2.3 expresses the number of voyages recorded at each regional port in terms of this directional criteria. It is clear from the annual sample that around two-thirds of the 5,982 voyages listed described cargoes clearing the ports of the region. Three factors explain this imbalance. Firstly, although the ports of the south west of England were heavily dominated by inwards shipments of coal and culm, they nevertheless maintained a steady stream of outwards voyages. In the case of the Somerset and north Devon ports this proceeded from the high levels of trade undert ken by letpasses which were not widely recorded elsewhere. At Padstow and especially St. Ives, however, the large amount of coal imported coastally was offset by a substantial coquet trade in copper ore, tin and tin ore to Chepstow, Liverpool and Bristol. In contrast, the coal ports of

Table 2.3: Voyages recorded clearing and entering Bristol Channel ports, sample year.

	Voyages	*Out*	*In*	*% Out*
Gloucester	626	332	294	53
Bristol	491	491	-	100
Bridgwater	426	95	331	22
Minehead	475	127	348	27
Ilfracombe	175	43	132	25
Barnstaple	320	54	266	17
Bideford	297	72	225	24
Padstow	157	28	129	18
St. Ives	94	43	51	46
Mounts Bay	17	4	13	24
Milford	506	452	54	89
Aberdovey	17	5	12	29
Cardigan	110	96	14	87
Carmarthen	73	29	44	40
Tenby	186	176	10	95
Llanelli	81	81	-	100
Swansea	531	531	-	100
Neath	437	437	-	100
South Burry	13	13	-	100
Cardiff	31	31	-	100
Chepstow	410	345	65	84
Liverpool	509	306	203	60
	5982	3791	2191	63

Pembrokeshire had a comparatively limited inwards trade, reflecting the lower levels of commerce associated with south west Wales. At Tenby, coastal imports were all but residual. Rather more voyages were recorded at Milford, although this was insignificant compared with coastal clearances. This pattern was reversed at Carmarthen - the most substantial local market, and, more significantly, removed from the coal measures - where inwards voyages dominated. Even so, the levels of coasting were still decidedly modest.

The principal explanation for the high representation of coastal exports lies in the absence of data for inwards trade at Swansea and Neath, Cardiff, and, most damagingly, Bristol. In such cases, the Port Book record allows a degree of reconstruction, albeit based upon the discontinuous and somewhat impressionistic evidence of other Bristol Channel Books. None the less, data abstracted from the sample year reveal that 49 voyages were recorded as bound for Swansea. Neath was the destination of a further 25 shipments and 12 additional voyages cleared for the minor creeks of the port.[21] This represents less than 9% of recorded coastal clearances. In addition, it is likely that a small proportion of the 276 voyages carrying coal to ports beyond the region returned other than in ballast. However, for reasons of time, it has not been possible to examine the Port Books for all the extra-regional ports to which Swansea or Neath traded. In contrast, in the case of Cardiff, the reconstruction of missing data is further complicated by the fact that the outwards trade of the principal creeks of the port, Aberthaw, Caerleon and Newport, was not habitually recorded in the coastal Port Books. None the less, the sample indicates that 55 voyages were bound for the Customs port and that around 39 additional and unrecorded voyages cleared Cardiff's subject creeks for regional ports in the sample year.[22]

The trade of the Glamorganshire ports can ther fore be reconstructed with some degree of confidence. However, owing to the geographical extent of Bristol's coastal trade and the fact that, unlike the coal ports of south Wales, Bristol was dominated by coastal imports, such methods can only give an approximation of the

number of coastal voyages discharging at Bristol. Despite this, the analysis of the outwards sections of the sample of regional coastal Port Books reveals that 869 voyages were bound for Bristol. This omits the large number of voyages clearing from the south coast ports, London and the north-west of England, apart from those recorded in the Liverpool Port Books.[23] Therefore, although Port Book evidence alone almost certainly underestimates Bristol's trade, it provides a base index of 1,360 coastal voyages either clearing or entering the port in the sample year.

A more complete indication of voyages entering Bristol coastways can be gained through the port's Anchorage figures. Anchorage was a local imposition leased by the Common Council to the Merchant Venturers and paid by all coasters entering Bristol from below Steep Holm and Flat Holm. Annual figures, which survive erratically from Michaelmas 1711, list the numbers of coastal voyages entering the port omitting only the 'above Holms' trade clearing from Gloucester, Chepstow and Cardiff.[24] A representation of the numbers of 'long-distance' inwards shipments at Bristol can be postulated by comparing the Anchorage figures with below Holms traffic recorded in the Port Books. Anchorage lists 372 separate voyages, the Port Book sample 228. Thus, if we accept that the levels of trade were fairly constant, and the Gloucester database suggests that 1711 and 1712 were broadly comparable to 1699 in terms of total voyages recorded, between 140 and 150 voyages may be seen to have entered Bristol coastally from ports beyond the region.

This is only an estimate. Anchorage represented numbers not trade. It was payable by all below-Holms vessels whether they carried official Customs documentation, entered in ballast, or merely used the port as convenient moorage. However, given the high incidental harbour and pilotage costs associated with Bristol, ballasting and especially mooring were unlikely to be economically prudent options.[25] Against this, any commission must be offset by the omission of Cardiff creeks from the Port Book record. Thus, an overall figure of around 1,500 voyages either clearing or discharging at Bristol may still represent an underestimate, especially if Wakelin's generous suggestions concerning non-coquet trade and inter-

port voyages in the upper Bristol Channel are applied to Bristol.[26] In addition, some account must be taken of letpass trade. Using the records of the principal letpass recording ports, non-coquet trade may have accounted for between 10 and 15% of recorded shipments on average.[27] As letpasses were confined to small wares, such as earthenware exported coastways from Bideford, it is probably unrealistic to suppose that similar levels existed at the above Holms ports and particularly at Gloucester, although its creeks appear to have conducted some trade. Thus, if a figure of 10% of voyages is applied to coastal clearances from Bristol and to entries from above Holms centres to cover non-coquet trade, a further 110 voyages can be added. However, this may be merely the tip of a rather large submerged iceberg: Barrett's estimate of 1,861 coasters entering and 1,632 clearing Bristol in the 1780's may in fact be a more realistic approximation of the total volume of coquet, letpass and ballast trade using Bristol in the early eighteenth century.[28]

The estimate of around 1,610 voyages either beginning or terminating at Bristol annually may still not account for levels of coasting hidden behind the generalisations and contradictions of the Anchorage figures and Port Book data. Even so it establishes Bristol as unquestionably the primate centre of coastal trade in the region outstripping even the inflated figures proposed by Wakelin for Gloucester.[29] It also emphasises two important factors in relation to the trade of the region. Firstly, it appears that Bristol's 'metropolitan' influence was organised more on a centripetal than a distributive footing: like London, Bristol absorbed far more voyages from the regional hinterland than it dispatched to its notionally satellite ports.[30] Secondly, it is also clear that, if Bristol's position within the coastal trade is to be understood more coherently, then the full picture of regional trade must be examined systematically. Through this not only can trade be recovered, but also many of the imperfections and strengths of Port Book data be more fully addressed.

ii. The system of trade: coasting links in the Bristol Channel.

The analysis of voyages has provided an important measure of coastal trade. Through the examination of Port Book evidence, a broad picture of the quantitative volume of traffic recorded at each regional port has been constructed. By applying a more considered and imaginative approach to reconstructing 'lost' data, the discrepancies of certain surviving records can be corrected. However, it is clear that to fully comprehend the complexity of coasting, the number and frequency of the connections that existed between regional ports has to be investigated. This section examines in detail the vectors of trade and uncovers the geographical patterns that defined coasting within the Bristol Channel. It provides a clear evaluation of the directional basis to the coastal trade, indicating the areas with which each regional port traded, stressing not only the cohesive network of intra-regional voyages, but also the longer-distance routes that linked the Bristol Channel ports to those beyond the immediate parameters of the region.

None the less, the number of centres concerned in coastal trade was extensive and enumerating every minor port and inlet that featured as either the destination or origin of voyages or the named 'home port' of coastal vessels, would be confusing. For instance, 77 separate centres within the Bristol Channel region were recorded as regular points of trade in the ten year sample of coastal Port Books, whilst beyond the regional enclave a further 74 ports stretching from Newcastle upon Tyne to Whitehaven, and including such outposts as the Channel Islands were represented.[31] In order to handle such a mass of data coherently, a twelve point geographical classification of ports has been devised. This is based upon the administrative subdivision of the coastline organised under the official Customs head ports outlined in Chapter 1 and Table 1.1. Thus, Gloucester, its estuarine creeks, Newnham and Berkeley, and the inland ports of the Severn and Warwickshire Avon navigations have been grouped under a unitary 'Severn' category, coinciding with the extents, bounds and limits of the Customs port of Gloucester. The other divisions correspond to the

officially recognised ports of Bristol; Bridgwater (described as Somerset); Barnstaple (north Devon); Padstow, St. Ives and Mounts Bay (north Cornwall); and Milford (Pembrokeshire and Carmarthenshire). All ports, whether member ports, sufferance creeks or 'unofficial' harbours, inlets and landing places contained within the designated stretch of coastline under the jurisdiction of the named head port have been included in each respective category. However, in the case of Cardiff, the nature and trade of the three constituent Customs House ports - Swansea and Neath, Cardiff, and Chepstow (notified as Wye) - was deemed to be so diverse and mutually exclusive as to warrant distinct categories. A further 'cross-regional' category relates to voyages within the region undertaken by vessels bound for destinations under the jurisdiction of more than one head port.[32] Extra-regional voyages and data omitted by Customs clerks or too illegible to decipher have also been appointed categories. These conventions have been adopted throughout the thesis.

The division of ports under Customs head port prepares Port Book data for more manageable analysis and presentation, as well as illustrating the major patterns of trade. In addition, the wider geographical approach irons out inconsistencies arising from obscure or uncertain destinations, and the discrepancies that can occur when the coastal Port Books of the port of origin are compared to the corresponding records of discharge.[33] It is recognised that such groupings clumsily or insensitively applied can lead to the erosion of the differences that existed between ports in terms of markets, supply, goods and such physical factors as ease of access and facilities. In widely dispersed areas like Pembrokeshire and Carmarthenshire (under the head port of Milford) or the extensive internal hinterland of the Severn navigation, the constituent coastal and river ports undertook markedly different types of trade and served contrasting hinterlands.[34] In all such cases a full explanation of the aggregate figures is provided in the text.

In Table 2.4 the geographical division of ports has been used to analyse outwards voyages in the sample year. Llanelli has been omitted as its Port Book record does not specify destinations. Table 2.5 repeats the analysis for voyages

Table 2.4: Destinations of voyages clearing regional ports, sample year.

	Bristol	Severn	Somerset	N. Devon	N. Cornwall	Pemb/ Carm	Swansea Neath	Cardiff	Wye	Cross Regional	Extra Regional	Unknown	Total
Bristol	-	231	50	27	15	29	19	29	23	-	59	9	491
Gloucester	281	-	26	6	-	2	-	5	10	-	-	2	332
Bridgwater	34	15	4	5	1	2	10	-	4	-	20	-	95
Minehead	64	9	6	7	-	6	20	4	3	-	7	1	127
Ilfracombe	16	-	7	5	4	-	1	-	-	-	9	1	43
Barnstaple	17	4	3	6	-	6	9	1	2	1	5	-	54
Bideford	15	-	6	2	2	8	16	1	-	-	19	3	72
Padstow	23	-	-	-	-	-	1	-	2	-	2	-	28
St. Ives	5	-	-	1	-	-	1	-	31	-	5	-	43
Mounts Bay	-	-	-	-	-	-	-	-	-	-	4	-	4
Milford	18	1	19	142	2	4	1	-	-	-	255	10	452
Carmarthen	9	1	-	-	-	-	2	-	1	-	15	1	29
Tenby	5	2	102	42	-	2	2	4	-	-	9	8	176
South Burry	-	-	-	10	-	-	-	-	-	-	-	3	13
Neath	16	2	208	108	39	-	-	7	-	-	53	4	437
Swansea	6	3	70	70	93	-	2	2	8	-	223	54	531
Cardiff	31	-	-	-	-	-	-	-	-	-	-	-	31
Chepstow	295	26	9	1	-	2	-	2	1	3	5	1	345
Total	835	294	510	432	156	61	84	55	85	4	690	97	3303
% of total	25	9	15	13	5	2	3	2	3	0	21	3	100
Liverpool	34	1	28	20	10	18	1	-	-	1	193	-	306

Table 2.5: Voyages entering regional ports by ports of clearance, sample year.

	Bristol	Severn	Somerset	N. Devon	N. Cornwall	Pemb/ Carm	Swansea Neath	Cardiff	Wye	Cross Regional	Extra Regional	Unknown	Total
Gloucester	225	-	17	-	-	5	7	8	31	-	-	1	294
Bridgwater	31	20	4	7	8	47	179	-	11	-	24	-	331
Minehead	56	11	-	3	3	99	133	22	11	-	10	-	348
Ilfracombe	8	2	9	9	1	32	46	-	4	-	21	-	132
Barnstaple	13	1	4	-	5	111	83	-	1	-	12	36	266
Bideford	11	-	2	1	3	89	75	-	2	-	20	22	225
Padstow	6	-	-	2	-	8	106	-	-	-	7	-	129
St. Ives	6	-	-	-	-	1	37	-	-	-	7	-	51
Mounts Bay	-	-	-	-	-	1	5	-	-	-	6	1	13
Milford	14	3	3	3	1	4	3	-	1	-	21	1	54
Carmarthen	14	2	1	4	3	6	3	1	2	-	7	1	44
Tenby	5	-	1	-	-	1	-	-	-	-	1	2	10
Chepstow	21	10	-	-	10	2	5	6	-	-	10	1	65
Total	410	49	41	29	34	406	682	37	63	0	146	65	1962
% of Total	21	2	2	1	2	21	35	2	3	0	7	3	
Liverpool	8	2	15	8	13	35	-	1	4	-	117		203

recorded entering Bristol Channel ports, although the study is limited by the absence of a full series of inwards Port Book data. For both Tables, percentage figures have been appended indicating the proportional share of trade enjoyed by each port or port grouping. By way of comparison, data for Liverpool have been appended to each Table, and have been broken down according to the regional categories outlined above. For these purposes, all voyages not associated with the Bristol Channel have been aggregated together under 'extra-regional' shipments, although these were mostly to and from the immediate coastal hinterland of Liverpool.

With regard to the number, frequency and inter-connection of voyages, the most important sector of the region was that defined by a quadrilateral of ports comprising Bristol, Gloucester, Chepstow, and Cardiff. This area, bounded to the west by the Holms, was dominated by the trade of the major navigations, the Severn and Wye, and the demands of the Bristol market. Trade within this sector was highly integral. In the sample year, Cardiff traded only with Bristol, whilst at Gloucester, where the record is more reliable, almost 85% of coasters cleared for Bristol, and a further 4% of voyages were destined for Chepstow or Cardiff and its creeks. The only significant geographical grouping to which Severn ports traded outside the above-Holms area was Somerset. Here, the ports of Bridgwater and Minehead accounted for around 8% of outwards voyages. The impetus for such long distance coasting was provided by the staple trade in Droitwich salt for the fisheries of the south west. By the mid-1690's, salt was in sufficient demand for south western factors to engage in an extensive direct trade that bypassed the more regular practice of transhipment at Bristol.[35] A similar picture is revealed at Chepstow, where 295 shipments were bound for Bristol in 1699, an additional 26 voyages cleared for the Severn ports and a further 2 voyages proceeded to Cardiff. In total almost 94% of coastal clearances were bound for the above-Holms ports, with foodstuffs and metal wares traded to Bristol the dominant cargo. However, Chepstow was less constrained by the physical capabilities of its vessels. Unlike the Severn, where flat-bottomed trows were generally limited to the upper estuary and the proximate seaboard, Chepstow

maintained trade with extra-regional centres, dispatching 5 voyages for Liverpool as back-cargo for salt in 1699.

Similarly, the bulk of coastal clearances from Bristol in 1699 were focused upon the above-Holms centres. Thus, Gloucester received 231 voyages;[36] an additional 23 shipments were recorded for Chepstow; and a total of 29 shipments was divided between Cardiff and its creeks.[37] However, in comparison to the confined commercial horizons of the river ports, the coastal trade of Bristol ranged more widely. This is understandable given the size, importance and extent of overseas and domestic trade controlled by the city. Bristol occupied an important role as coastal entrepot redistributing regional goods, most especially commodities carried down the Severn and Wye, mainly to ports beyond the Bristol Channel. This is reflected in the number of voyages dispatched to centres outside the region. In 1699 an eighth of recorded clearances (59 voyages) were bound for extra-regional ports. The main destinations were the principal urban centres of the south and north west coasts: 25 voyages cleared for London, 8 for Liverpool, 7 for Topsham, Exeter's deep-water port, and 7 for Plymouth. In addition, a steady trade was maintained with the below-Holms ports with 140 voyages dispatched to the lower reaches of the Bristol Channel. Whilst the Somerset ports, mainly Bridgwater and Watchet, accounted for over a third of this trade, no one port grouping was overly dominant.[38] Indeed, Tables 2.4 and 2.5 appear to reveal a cyclical exchange mechanism in practice: the geographical groupings that received most shipments from Bristol compiled the most shipments in return. This was a consequence of both the general nature and the diffuse demand for Bristol cargoes. As Chapter 3 emphasises, voyages clearing from Bristol carried very similar assemblages of overseas and domestic wares, no matter their stated destination. Apart from the bulk staples - iron and metal goods - Bristol dispatched the sort of easily merchantable 'shop goods' not directly available to consumers in the region. Thus, the number of shipments was dependent upon the ability of each regional grouping and its hinterland to absorb high value goods emanating from the 'metropolis of the west'. For many ports, ballasting was very much a characteristic of

the return leg of many Bristol bound voyages.[39] The exceptions to this were Bideford and Barnstaple which had a small share of overseas trade and thus were not generally sent consignments like tobacco or train oil which were imported directly. However, Bristol-controlled goods, such as iron and strong waters, the latter probably for overseas export, still furnished an appreciable trade.

The central importance of Bristol as a regional focus of trade is also demonstrated in the figures for the ports of the south west. For Bridgwater, Minehead, Ilfracombe, Barnstaple and Padstow, Bristol was the single most important destination for coastal vessels. However, the absence from the record of letpass trade at Padstow has overemphasised the Bristol-bound coquet trade. Compared to Padstow, the trading profiles of the letpass-recording ports were more extensive. Thus, Bridgwater traded heavily with Gloucester and Liverpool. This took the form of letpass shipments in returning salt vessels and explains the high proportion of extra-regional voyages recorded at Bridgwater. All 15 shipments clearing the port for Liverpool or Chester in 1699, picked up substantial loadings of salt in return.[40] The importance of Cheshire salt is also apparent in the proportionally large numbers of voyages linking extra-regional centres to Minehead, St. Ives, and, especially, Bideford, where boats from London and the ports of south Cornwall were also well represented. At Ilfracombe, where the distribution of the herring catch was the main commercial activity, these centres were wholly responsible for voyages beyond the region.

A third category of trade involved voyages clearing the south west for the Welsh coal ports carrying mainly small items of back cargo under letpass, transire or sufferance. At Minehead and Bideford this assumed substantial levels, with over a third of all coastal clearances from Bideford in 1699 being letpass voyages to ports under the jurisdiction of Swansea and Neath and Milford. Apart from Mounts' Bay, where recorded coastal voyages were too infrequent t imply any major patterns of trade, the outstanding feature of the south western ports was the number of voyages clearing St. Ives for Chepstow. In the sample year, almost two-thirds of shipments from St. Ives were bound for the Wye ports. Again the lack of recorded non-coquet

trade affects these figures, although the importance of the trade in copper ore and tin cannot be underestimated for either centre.

In contrast, the voyages of the south Wales ports were dominated by the shipment of coal and culm. However, behind such a simple supply equation lay important differences in both the geographical groupings served by each coal exporting port and also the specific ports to which voyages were made. Based on the evidence of voyages, Table 2.4 indicates that the coal trade was influenced by distinct geographical patterns. In the sample year, over three quarters of the voyages destined for the region clearing Milford were bound for north Devon ports. On the other hand, Tenby was principally oriented towards Somerset and only a quarter of Tenby voyages discharged in north Devon. In the case of Swansea, whilst 70 shipments were undertaken to Somerset and also to north Devon, 93 voyages departed in the rather smaller boats of the north Cornish ports. In comparison, Neath was largely tied to supplying Somerset: almost half its voyages cleared for ports under Bridgwater's jurisdiction, whereas a quarter were destined for north Devon and only 9% for north Cornwall. All ten voyages from South Burry which indicated destinations were bound for north Devon ports.

However, a more complex picture is revealed by an analysis of the ports which imported coal coastwise. Table 2.6 presents the number of voyages clearing the five principal south Wales coal ports for the south west in the sample year. Within the broad geographical divisions, Bridgwater is revealed to be the most prominent importing centre amongst the Somerset ports. However, cumulatively, Minehead and particularly its formally unrecognised creek, Watchet, outstripped the head port in terms of voyages clearing Swansea and Tenby. Thus, the figures reveal important commercial distinctions within the boundaries of Minehead Customs port. In the sample year, Minehead accounted for only 56% of inwards coal shipments itself, with the lesser creeks on a almost equal footing: factors lost in the collective account provided by the local Port Books.

Table 2.6: Destinations of coal shipments from south Wales ports, sample year.

		Neath	Swansea	South Burry	Tenby	Milford	Total
Somerset	Bridgwater	139	34	-	40	12	225
	Combwich	2	-	-	-	-	2
	Minehead	64	21	-	11	-	96
	Watchet	3	15	-	39	7	64
	Porlock	-	-	-	12	-	12
North Devon	Lynmouth	-	-	-	4	-	4
	Ilfracombe	26	23	-	25	1	75
	Barnstaple	28	8	3	7	129	175
	Bideford	34	21	3	3	11	72
	Northam	19	7	4	-	-	30
	Clovelly	1	11	-	3	1	16
Cornwall	Padstow	32	45	-	-	2	79
	Boscastle	-	1	-	-	-	1
	Port Isaac	-	9	-	-	-	9
	St. Ives	5	30	-	-	-	35
	St. Agnes	-	1	-	-	-	1
	Penzance	2	7	-	-	-	9
	Total	355	233	10	144	163	905

With regard to the north Devon ports, the figures are overshadowed by the number of voyages recorded in the Milford Port Books as clearing for Barnstaple. However, comparison with the inwards sections of the Barnstaple Books emphasises that this reflected dilatory recording practices at Milford more than the precise destination of cargoes carried. Voyages from Neath were roughly divided between Barnstaple, Bideford, Northam and Ilfracombe. Ilfracombe, a much more exposed port and one which operated much smaller coasters rather more frequently than other south western ports, was engaged in a more vigorous trade with Swansea and Tenby than that undertaken by the Taw-Torridge ports. In contrast, Padstow and St. Ives, the only substantial ports of north Cornwall, monopolised what trade cleared Swansea and Neath for the area.

Intra-regional voyages represented only a part of the shipments clearing the south Wales ports. The more peripheral geographical position of Milford encouraged trade with the ports of the south coast and north west of England. Milford culm, widely praised for its range of industrial uses, could be delivered more competitively than inferior grade Tenby or Saundersfoot culm or even Glamorganshire bituminous coals at the south coast ports. Although longer- distance coasting posed serious problems, Milford's location ensured that its culm traded at an advantage over the other coal producing areas in the region serving the Bristol Channel market.[41] As a result, the Bristol Channel region was substantially less important to Milford than trade conducted with external centres. Of the 255 voyages clearing Milford in 1699 for ports beyond the region, the principal centres of south Cornwall and Devon accounted for almost two-thirds with Exeter (96 voyages), Dartmouth (38 voyages) and Plymouth (24 voyages) receiving the lion's share.[42] Even so, the quality of Milford culm ensured that regular links were maintained with such far-flung centres as London and Yarmouth.

The pattern of voyages recorded at Swansea demonstrates a similar geographical tendency. In the sample year, almost 90% of the 223 voyages clearing extra-regionally were bound for south Devon and Cornwall with Plymouth, Falmouth

and Exeter/Topsham taking the bulk.[43] Similarly at Neath, where only 53 voyages were dispatched beyond the region, most voyages cleared for the south coast of Devon and Cornwall. Truro, which was sending large quantities of copper ore to Mackworth's works at Neath, and Exeter were the main centres of this trade.[44] In comparison to even extra-regional trade, voyages to Bristol were minimal with only 54 shipments clearing the ports under Milford, Swansea and Neath in the sample year. The exception to this was Carmarthen which was principally concerned with shipping corn and market goods to Liverpool and Bristol.[45]

The numbers of voyages entering regional ports roughly confirm the broad patterns of trade described above. For this reason, it is not proposed to reiterate in depth the coastal connections of the Bristol Channel from the perspective of the importing centres. However, a comparison between coastal clearances and entrances throws important light upon some of the economic underpinnings to coastal trade. A significant element in the organisation of coasting was the procuring of back cargo. Evidently it was in the interests of shippers and merchants to secure sufficient return cargoes to cover at least the expenses of the crew, victuals and port charges. As Chapter 5 shows, acquiring a return freight was often a laborious process involving large networks of merchants and factors. Back cargo, whether this took the form of coastal imports or exports, also depended upon such variables as availability of goods and the ability to sell the same at the port of discharge: the Port Books often note speculative cargoes returned 'for want of sale'. Ports with small populations and constricted hinterlands, like Penzance, had low commercial thresholds, and in such cases returning to port in ballast, or very occasionally freightage to other ports were often the only practical options.

Table 2.7 illustrates the issue of return cargoes by comparing the number of recorded voyages undertaken between thirteen regional ports and three important sources of coastal supply - Bristol, Liverpool, and the main south Wales coal ports. In this the research has relied solely upon the evidence of the coastal Books for the thirteen centres; no attempt has been made to conflate figures from different records to

Table 2.7: Return voyages: Bristol, Liverpool and south Wales coal ports, sample year.

	Bristol			Liverpool			South Wales coal ports		
	To	From	% return in ballast	From	To	% clear in ballast	From	To	% clear in ballast
Bridgwater	34	31	9	20	14	30	226	12	95
Minehead	64	56	14	4	0	100	232	26	89
Ilfracombe	16	8	50	10	0	100	78	1	99
Barnstaple	17	13	24	3	1	67	194	15	92
Bideford	15	11	27	9	7	22	164	24	85
Padstow	23	6	74	7	2	71	114	1	99
St. Ives	5	6	0	7	5	29	38	1	97
Mounts Bay	0	0	0	0	1	0	6	0	100
Milford	16	12	25	6	24	0	7	5	29
Carmarthen	9	13	0	6	13	0	9	2	56
Tenby	5	4	20	0	2	0	1	4	0
Chepstow	295	21	93	1	5	0	7	2	71
Gloucester	281	225	20	0	0	0	11	2	82

balance imperfect datasets.[46] With regard to south Wales and, to a lesser extent Liverpool, the inwards shipment of bulk minerals was the overriding feature of trade. However, the relation with Bristol was more complex and not wholly 'one-way', to use Willan's expression: Bristol was as dependent upon goods sent coastways from the region as the latter relied upon the high-value commodities clearing Bristol.[47] Presuming that most vessels involved in these trades were 'constant coasters' that regularly plied the same course, Table 2.7 provides an indication of the percentage of voyages that either entered from Bristol or cleared for the south Wales coal staithes or for Liverpool in ballast. This presupposes that voyages were cyclical or followed established and consistent routes. This was certainly the case for most colliers and the packet type vessels serving Bristol, but may not have always pertained to vessels in the Liverpool trade. However, Chapter 5 demonstrates that the trade in Cheshire salt at Bridgwater was a highly organised affair involving a core number of regular vessels. Port Book evidence suggests that similar patterns were in place at most regional ports.

The major feature of Table 2.7 is the almost complete absence of return voyages to south Wales. This was a result of the economics of the coal trade and the economically undeveloped nature of the south Wales hinterland at this time. In the Bristol Channel low unit costs prevailed: voyages were usually short, crew and overheads were minimal, and the goods involved little capital outlay. What is more, in the south-west, coal had access to proximate, ready markets which encouraged quick turn-around times: in summer months a collier could make a round trip in a week given favourable weather conditions. In 1673, John Tiver, a former Bridgwater boatman, deposed that 'if the winde and weather prove good a barke or trough may make her voyage from Bridgwater ... into Wales and there be loaden and returned to Bridgwater againe with her loadinge and the coles and culme where with it is loaden be conveyed from thence to Ham Mills[48] ... in the space of a weeke and ordinarily in a fortnight'.[49] In return, however, south Wales did not offer extensive opportunities for the sale of industrial goods or foodstuffs produced in the south west.

Consequently, most colliers returned to south Wales in ballast, with only the ship's provisions on board.[50] A slight exception to this pattern was that a few voyages carried return letpass goods from Bideford and Minehead, and also a very minor exchange trade in different grades of coal existed between the south Wales ports. Therefore, the more enclosed dynamic of Bristol Channel trade contrasts sharply with the east coast coal trade. Although supply was still a paramount factor, the greater distance and cost involved in coasting the less sheltered waters of the North Sea appears to have encouraged colliers to risk higher value and perhaps more merchantable return cargoes from London, as Dietz has indicated, or alternatively, to ply goods between the intermediary coastal ports.[51]

A rather different structural basis can be distinguished in trade of the south western ports with Liverpool. The south west was dependent on salt sent coastwise from Liverpool for much of the supplies required for industrial and domestic purposes and particularly, the inshore and Newfoundland fisheries. Although by 1699 Droitwich white salt had captured a share of this lucrative market, Cheshire white and increasingly rock salt was a vital commodity.[52] However, a substantial and regular return trade was maintained between the salt-importing centres of the region and the north-west: Bridgwater consistently dispatched small consignments of agricultural goods; Bideford earthenware and tobacco pipe clay; and St Ives copper ore and tin. Such patterns were more emphasised in the trades of the south Wales ports. Milford, Carmarthen, Tenby and even Chepstow were net coastal exporters to Liverpool. Indeed, Liverpool can be seen to be rather more dependent upon Pembrokeshire and Carmarthenshire grain than the south Wales seaboard had need for large shipments of Cheshire salt.[53] Chepstow's involvement was mainly the result of enterprising Bridgwater salt vessels collecting cinders, corn and cider. Three of Hoare and Company's boats received consignments from Alexander Phillips of Brockweir on the return leg to Liverpool in 1699. This explains the shortfall recorded clearing Bridgwater.[54] The one vessel discharging at Swansea in 1699, the *Phoenix* of Swansea, also picked up a return cargo at Chepstow. In contrast, Minehead,

Ilfracombe (the most important regional centre in the inshore fisheries), Barnstaple and Padstow dispatched only a fraction of the trade discharging from Liverpool. In addition, the Liverpool Port Book reveals that whilst Bristol received 34 salt shipments in 1699 only 8 returned with customable cargo. In this case of Bristol and Minehead, return voyages may have been directed to Ireland and thence to Liverpool.

The data relating to Bristol outline a rather different commercial arrangement with inward bound voyages outweighing clearances. Bristol sucked in more coastal trade than it dispensed, reflecting a greater demand for goods at Bristol, often shipped up in small consignments, than there was regional demand for the more costly wares characteristic of many Bristol cargoes. This pattern was most apparent at Chepstow where over 90% of voyages to Bristol returned in ballast. As boats of Chepstow were primarily river craft only suitable for trading in the upper Bristol Channel, it can be fairly assumed that such vessels did not engage in coasting voyages beyond Bristol. For similar reasons, around a fifth of all Severn trows returned unladen or with non-coquet goods to Gloucester in 1699. A small discrepancy between coastal imports and exports was also recorded at below-Holms centres. At the Somerset and north Devon ports, outwards trade to Bristol was conducted mainly under letpasses, the absence of which probably explains the excessively low figures for coastal clearances at Padstow and St. Ives. However, the centripetal pattern of coastal supply was reversed at the periphery of the region. Both St. Ives and Carmarthen received more shipments from Bristol than were dispatched. This suggests that the trade of these ports operated on a more strict cycle involving regular craft and organised by regular merchants. For example, the local packet vessel, the *John* of St. Ives, undertook all 11 of the recorded voyages between St. Ives and Bristol in the sample year.[55] In the case of Carmarthen, the figures may have been distorted by vessels which cleared to Bristol from other south Wales centres discharging at Carmarthen on their 'home' leg. In a localised way, Carmarthen thus acted as the economic hub and coastal redistributor of Bristol goods to a more limited economic and geographical hinterland.[56]

iii. Cycles and seasons: coastal voyages, 1695-1704.

Despite Willan's rather unflattering picture of regional coasting as chaotic and unstructured, it is clear that coastal voyages in the Bristol Channel followed distinctive and regular patterns.[57] Whilst broad patterns can be identified, it is highly unwise to imply that uniform levels of coasting existed. The sample year at the core of this study represents data of optimum stability in which contingent factors such as war, excessively inclement weather, and the worst of the region's periodic and in some localities severe harvest failure and resultant dearth were absent.[58] However, the coastal trade did not exist in the sanitised vacuum of computer-aided research. In an age dominated by primary production, external variables had important repercussions upon how trade was facilitated. This was largely expressed in the choice exercised by producers, merchants and wholesalers between complementary forms of transport. Therefore, it is important to subject Port Book data to further analyses in order to determine whether the structural underpinnings of regional trade were affected by variation and to what extent the main patterns of coasting were determined by seasonal or more ad hoc factors.

As Table 2.2 has emphasised, the number of voyages recorded at regional ports fluctuated markedly from year to year. Evidently, some shifts in local economies were expressed through subtle adjustments in the trade in specific goods. This is discussed in more depth in Chapter 3. However, more general factors can be detected. War, or the threat of war, threatened commercial equilibrium. For example, the 1688-1697 conflict with France provoked extensive maritime stoppage and economic disruption. In 1689 and 1690, the Bristol Channel was closed to coasters; an embargo that threatened to curtail normal trading and seriously disrupt the Bristol fair, 'upon wch', the Bristol petitioners declaimed, 'not only the trade of this city, but of the adjacent countryes & Wales doe principally depende'.[59] Fresh hostilities in 1702 caused disruption to the staple fish and wine trades with the Iberian peninsula, and to the overseas convoys transporting much of the region's supply of sugar,

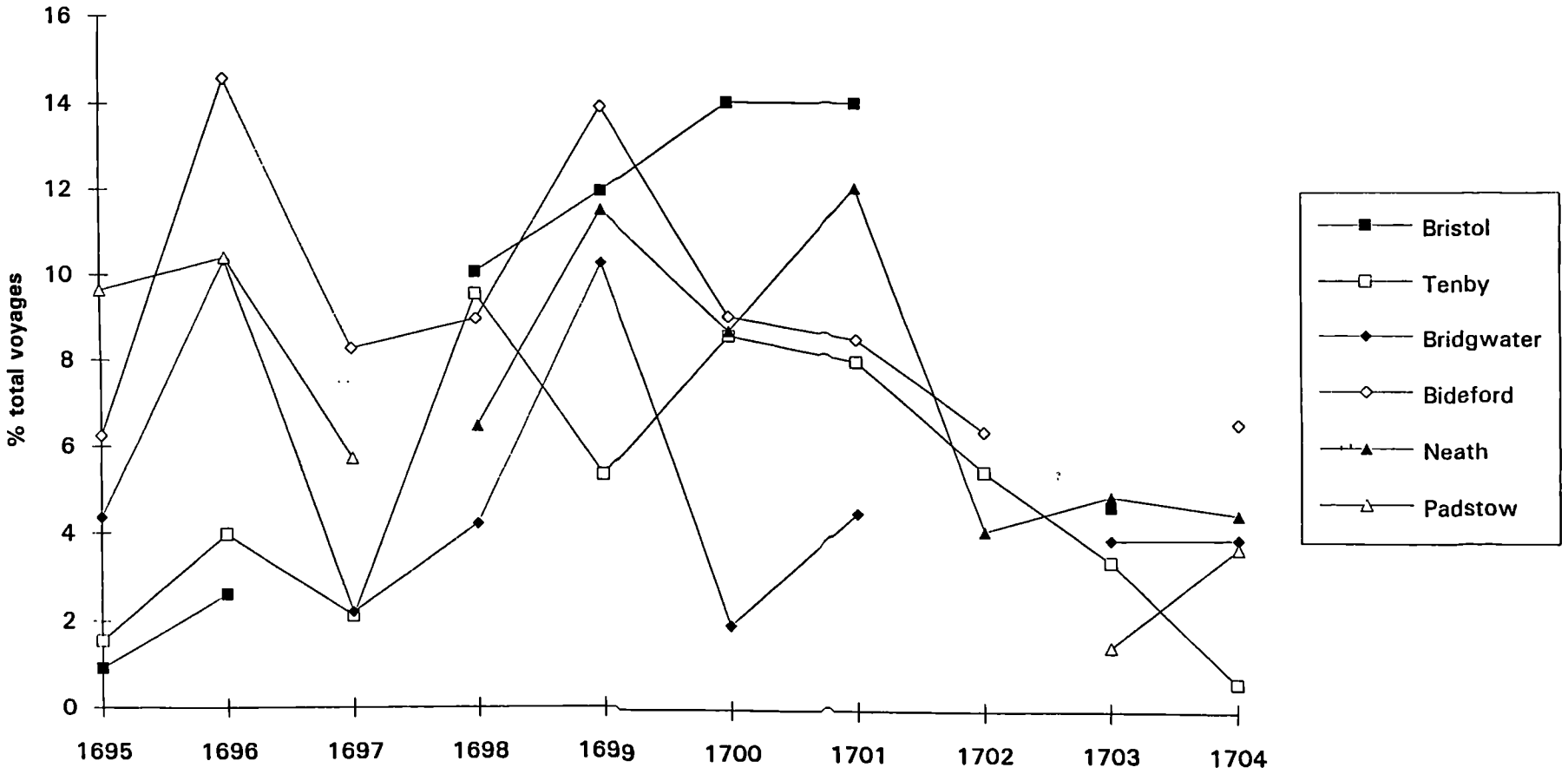
tobacco, dyestuffs and other transoceanic comestibles.[60] However, war was not wholly deleterious to certain sectoral interests. The Bristol copper and brass industries may have gained vital impetus through the demands of a war economy,[61] and the substitution of domestically produced spirits, strong waters and low wines for French brandy fostered the growth of commercial distilleries in Bristol.[62] Trade may also have been encouraged by war: greater opportunities to exploit domestic shortages existed,[63] and formal alliances were likely to enhance trade agreements.[64]

None the less, international disputes had tangible short term repercussions for coasting. Warfare heightened the operation of the press which remained an intermittent blight on regional coasters, particularly those dealing with the larger ports or engaged in voyages beyond the Bristol Channel.[65] In 1703, the mayor and magistrates of Bristol were warned that 'noe protections shall be granted to coasters, till one half of the number of seamen belonging to each port' was submitted to the press.[66] However, the most serious local problem was the threat privateering posed to the conduct of long-distance coasting.[67] In 1692, at the height of the French action, coasters were ransacked off the coast of Ilfracombe,[68] and as late as 1697 most long-haul coasting vessels would not move without convoy. For example, Philip Cockrem, master and part-owner of the *Exchange* of Bridgwater, writing from Liverpool in June 1696, complained that he was unavoidably delayed in delivering his cargo of salt, 'finding the French fleet laid up in Brest, inferr that theire condition compels them to infest our coasts & chanels with theire privateers' and that `some masters belonging to this town...advise that there is 2 French men of war & 15 privateers at the north of Ireland and the adjacent partes'. Further information filtering through to Cockrem was equally distressing: 'Letters from Penzant' he warned 'advise the privateers are seen daily and from Exon [and] they advise their M[aste]rs not to come out to sea with out convoy & from Watchett it is writ [that] the French privateers [are] as high as the Homes [Holms]'.[69] Cockrem's hysteria was well founded; a year earlier William Alloway and John Wheddon, merchants of Bridgwater and Watchet, suffered the loss of their coaster, the *Satisfaction* to one such privateer.[70]

What were the effects of these factors upon the patterns of regional coasting? Figure 2.1 indicates the fluctuating levels of trade undertaken by six principal Bristol Channel ports with centres from beyond the region between 1695 and 1704. In this all extant Port Books, including half-years, have been used and the data are expressed as a percentage of total annual voyages to account for variations between ports. The Figure addresses the widely held assumption that war shackled the coastal trade.[71] Undoubtedly, privateering made long-distance coasting both more hazardous and arduous by the delay and expense involved in travelling in convoy, where this was available. But was it automatically the case that merchants sent overland all but the bulkiest forms of goods, wherein the quantities involved made costs prohibitive? In such conditions, one would expect coasting to be limited to the more secluded waters of the Bristol Channel. This was certainly the case with Bristol, which because of its more easterly position was more likely to be affected by disruption to long distance routes and more able to switch to its established network of overland carriers for goods dispatched beyond Land's End. In 1695 and 1696 voyages to centres beyond the region numbered only four and ten respectively, with Liverpool the main destination. By 1698, the first full peace year available, 45 voyages were bound for extra-regional centres, with London, Topsham and the exposed south coast the most prominent.[72] This had risen to the level of 59 voyages in 1699 and 51 in 1701. In both years London was the main focus of shipment. Between 1699 and 1701, therefore, 12-14% of coastal clearances from Bristol were long-distance voyages. This strongly suggests that such coasting voyages were dependent upon the safety of south coast shipping lanes. By the second half of 1703, only 12 voyages were recorded clearing for beyond the region. However, this may have been more directly related to freak weather conditions in November - the Great Storm - that wrecked at least one prospective voyage to London and disrupted th operation of the port, rather than the outbreak of war with France.[73]

At Neath, data from the half years for 1699 and 1700 confirms a broadly similar picture. Voyages to extra-regional ports peaked in years of peace and tailed

Figure 2.1: Extra-regional voyages, percentage of annual voyages, 1695-1704.



off dramatically from 1702. The ports of south Cornwall, south Devon and London formed the principal 'external' domestic market for Neath coal between 1698 and 1701 accounting for no less than 87% of clearances beyond the region. By 1702, however, such shipments had declined with more voyages destined for Aberdovey. In part this reflected the activities of Sir Humphrey Mackworth in the development of lead mining in Cardiganshire. It also emphasises the point that Land's End acted as the effective south western parameter to the region in times of maritime disturbance.[74] This pattern can also be discerned at Tenby, although the port was much more closely tied to regional systems of coasting than Neath. Thus, at no point did extra-regional voyages represent more than 10% of recorded coastal clearances from Tenby. However, apart from 1699, where levels were generally low, the period between 1698 and 1702 saw a proportionally greater trade with the south coast centres, mainly Plymouth, London and Topsham/Exeter and even the occasional voyage to Yarmouth.[75]

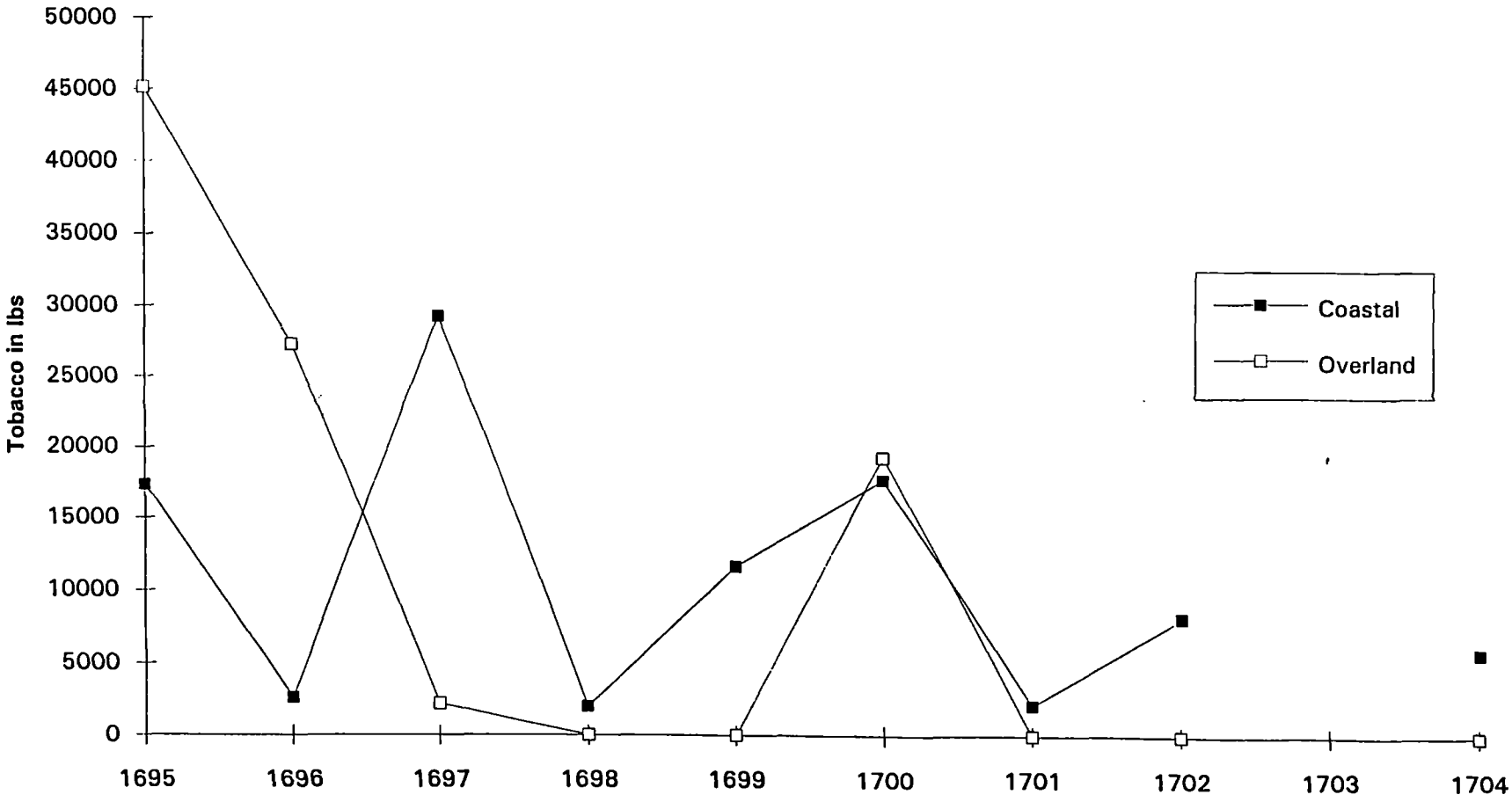
The Port Books for Neath and Bristol only contain data for coastal clearances and Tenby was so dominated by the coastal export of culm as to render the inwards trade numerically insignificant. However, there is reason to suggest that inwards shipments, especially the high bulk trade in Cheshire salt, was less affected by the rigours of privateering than trade with the south coast. If data for Bridgwater, Bideford, and Padstow are examined, a distinct peak in extra-regional voyages is shown in 1696. This was almost wholly the result of salt imported coastally from Liverpool and, to a much lesser extent, Chester.[76] Clearly, salt was able to bear the additional charge and risk involved in coasting in 'privateer-infested' waters. Evidence also suggests that for regional ports below the Holms, Cheshire white and rock salt enjoyed a near monopoly of trade, greatly enhanced by the embargo on French supplies. By 1697 and 1698, competition from Droitwich salt, which could be delivered more cheaply, and restored overseas imports substantially reduced coastal shipments from Liverpool.[77] However, leaving aside 1696, Bideford and Bridgwater show some similarity with the wider sample of ports. In particular, extra-regional

voyages peaked in 1699, the sample year, representing over 14% and 10% of all voyages respectively. What is more, although Liverpool remained the single most important port, other centres, especially London and the ring of south western ports from Falmouth to Exeter, assumed a far larger share of trade, notably so at Bideford.[78]

The Bideford Port Books also indicate that war may have been decisive in influencing the diversion of coastal cargoes to overland routes. Between 1695 and 1700, it is clear that some high value goods were sent overland to centres usually served by coastal craft.[79] This is best observed through the trade in tobacco in which Bideford was beginning to rival Bristol as a local supplier of directly imported goods.[80] In Figure 2.2, data for the half years 1698, 1701 and 1704 have been used, thus providing an indication of the comparative levels of overland and coastal traffic if not an accurate chronological reconstruction of trade. In 1695 and 1696, overland routes dominated coastal voyages with 72% and 91% of all tobacco moved from Bideford taken by land carriage mainly to Exeter and Plymouth. In 1695, 25,570 lbs of tobacco was carried to Exeter, mostly on the account of John Smith, and 8 wagon journeys accounted for the 19,578 lbs dispatched by George Buck to Plymouth.[81] In 1696, Smith, Buck, George Strange and John Wadland were responsible for 22,962 lbs of tobacco sent to Exeter in 10 overland consignments, whilst Smith merchanted two further tobacco entries 'per land carriage' to Penryn (3,590 lbs) and Port Isaac (720 lbs).[82] In 1697, however, only two overland entries were recorded.[83]

1695, 1696 and 1697 were years in which the tobacco trade was heavy - over 62,000 lbs was dispatched from Bideford in 1695 and around half that amount was recorded in 1696 and 1697. In 1698 and 1699, however, trade was much reduced. No overland entries were recorded in these years and it may have been that the south coast ports were importing tobacco directly from overseas or from other coastal suppliers: Exeter which was effectively cut off from Bristol in 1695 and 1696, received 21,020 lbs via Topsham in 1698 and 53,094 lbs in 1699. This would seem to confirm Hoon's assertion that tobacco, because of its high unit value, was only regularly dispatched

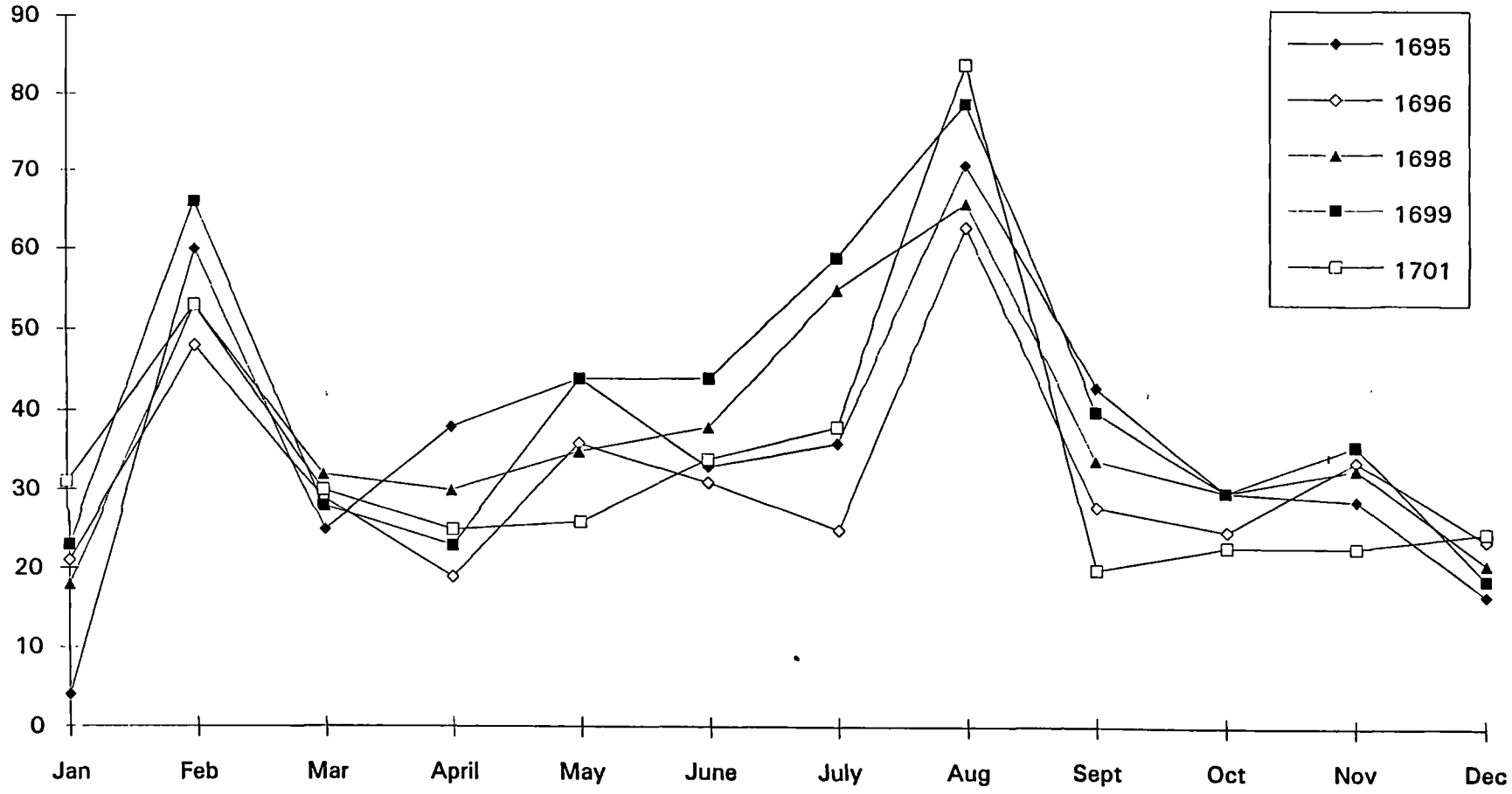
Figure 2.2: Tobacco dispatched from Bideford, 1695-1704.



overland 'in times of war because of the danger to goods carried by water', and that in more stable years the regional centre of tobacco importation, Bristol, assumed a much more extensive role geographically.[84] None the less, in 1700 land carriage accounted for the bulk of tobacco (19,476 lbs from a total 37,320 lbs) recorded in the Bideford Books. In this case it was likely that the tobacco was destined for re-export; the elaborate record of carriage was required for the securing of drawbacks and debentures.[85] For the rest of the years for which data are present, it appears that the tobacco was a largely incidental trade and wholly coastal in operation. This again may have proceeded from Bristol re-asserting a wider hegemony in this trade, or that such supplies brought into Bideford were being re-exported. Data from the 1720's suggests that the Taw-Torridge ports retained little more than 18% of the tobacco they imported.[86]

However, the distinct if variable influences imposed by war were underpinned by two constants: the Bristol trade and the link with the south Wales coal ports. These trades formed the economic heartbeats, exerting strong seasonal influences that regulated the coastal trade of the region. Figure 2.3 presents the number of coastal voyages from Bristol for the five full sampled years by month of shipment. The principal feature of the graph is the general stability of trade throughout the year. Even in the winter months when climatic conditions were likely to have been adverse, and when the break between Port Books may have had a deleterious effect upon recording practices, around twenty voyages per month were listed.[87] The exception to this was in 1695 when only 4 voyages were recorded in January, although, evidence suggests that severe frost and snow may have impeded trade with Severn bound voyages being most affected.[88] Despite this, the graph reveals distinct peaks in February and August: over 30% of all voyages cleared Bristol in these months. These peaks were closely related to the great marketing high points of the regional calendar, the St. Paul's and St. James's fairs held on 25 January and 25 July respectively.[89] The fairs were of crucial importance in governing the association between Bristol and its regional hinterland, not only in relation to coasting, but also in the settling of

Figure 2.3: Voyages from Bristol by month, 1695-1701

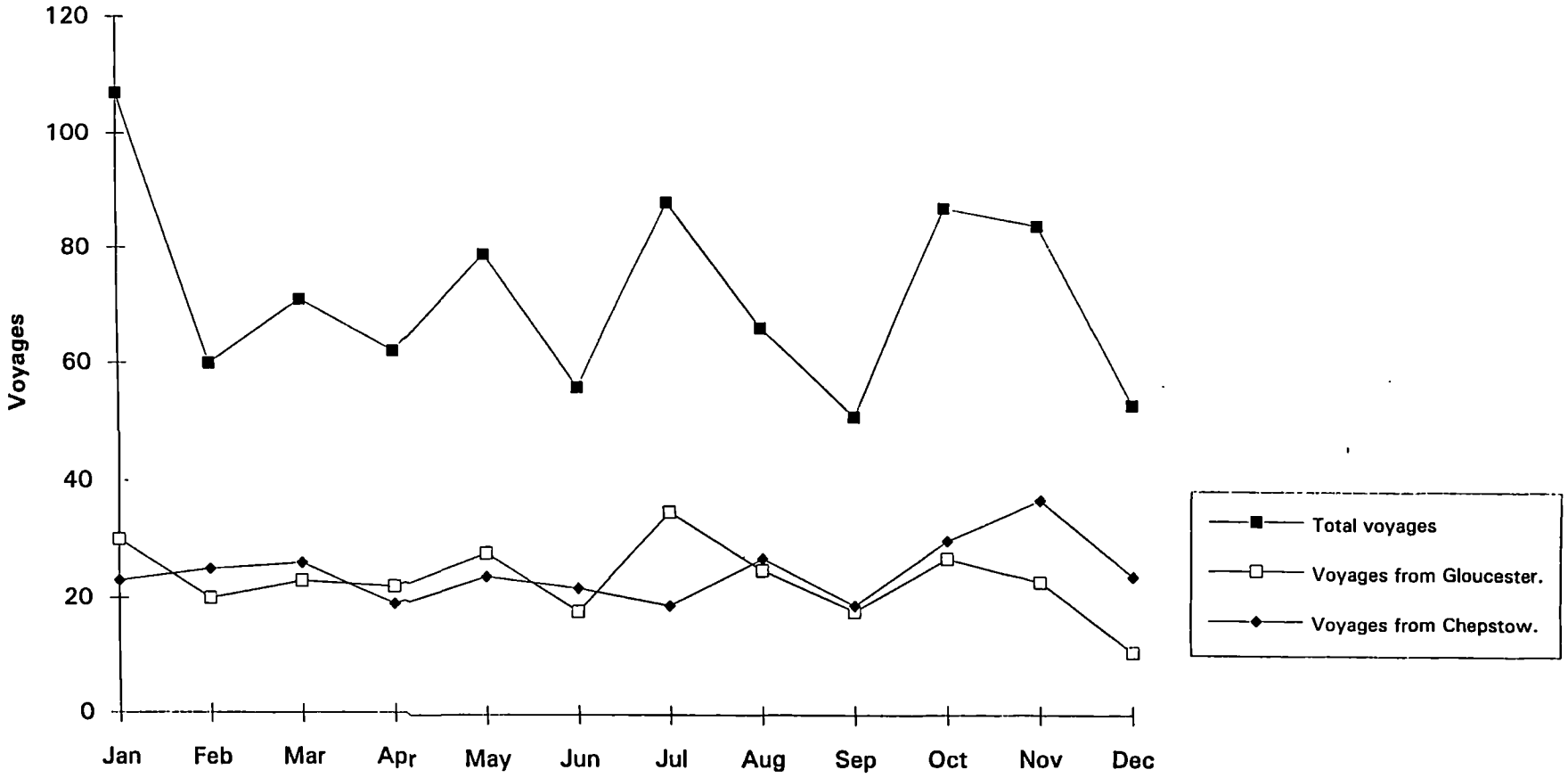


accounts, procuring credit, and the securing of future business. For example, Hoare and Company used both fairs to resolve outstanding debts, renew contractual obligations, and thrash out new financial and commercial agreements.[90] The increased commercial activity of February and August thus appears to represent the ferrying back of cargoes acquired or assembled at the fairs.[91] In contrast, March and September witnessed considerable downswings: in 1701 less than a quarter of the voyages recorded in August cleared the port in September.

The other side of this coin might suggest that inwards shipments followed a similar if lagged pattern. Although the omissions of the Bristol Port Books do not allow the full reconstruction of voyages entering Bristol, an indication of the seasonal basis to regional trade has been established for the sample year and graphed in Figure 2.4. The graph presents cumulative totals of voyages bound for Bristol from regional ports by date of clearance and not entry. Voyages from more remote centres were likely to have departed for Bristol with ample time to spare. Regional coasting, even the short-haul traffic between Swansea and Bridgwater, could take 'six or seaven weeks' in winter and considerably longer from distant ports like Liverpool.[92] Therefore, it may be expected that clustering around the winter fair would be less apparent. For this reason, voyages from Gloucester and Chepstow, the two most important coastal centres close to Bristol and thus perhaps least likely to be affected by the rigours of winter coasting, are also disaggregated in Figure 2.4.

The graph demonstrates that, consonant with the demands of the Bristol fairs, higher levels of trade were recorded in January and July. This was most keenly felt at the regional ports below the Holms. At Minehead, for example, sixteen voyages cleared for Bristol in January alone, representing over a quarter of the total number of shipments to Bristol in the year. In the longer sample, between a quarter and a third of all Bristol-bound voyages from Bridgwater, Bideford and Padstow cleared in the months of the fair. None the less, the peaks were not as pronounced as in the outward trade. In particular, the Wye and Severn trades were characterised by a high degree of stability throughout the year. The figures for Gloucester and Chepstow may indicate

Figure 2.4: Coastal voyages to Bristol by month, sample year.



that these ports were more influenced by Bristol's weekly markets than its biannual fairs. Certainly at Cardiff, the other main above Holms port, the regular packet sloop of the 1720's and 30's, the *Lyon* of Cardiff, was described as the Bristol 'market boat'.[93] The wider projections for Gloucester suggest that between 1576 and 1728, voyages were most numerous in January and July, with the two months accounting for over 20% of all voyages clearing the port.[94]

The other main cycle of trade involved the trade in coal and culm. Much of the work on coal has been dominated by studies of the east-coast trade and the distinct seasonal patterns associated with coasting in the North Sea. The most recent overview has argued that the trade was reduced 'to a virtual cessation of sailings in December and January, and a mere trickle in November and February' with a consequent rise in prices at London.[95] However, very little attention has been focused on the Welsh coalfield and the supply of the Bristol Channel region.[96] With this in mind, Figures 2.5, 2.6 and 2.7 depict the numbers of voyage trading coals and culm from the major south Wales ports in the period.[97] In particular, Figure 2.5 reveals that strong seasonal and geographical influences defined the coal trade. As Hatcher emphasised, the seasale of coal and culm was not so much dependent upon production levels, which contrary to Nef's assertion were neither erratic nor liable to seasonal suspension, as upon transport to the port and access to shipping.[98] Thus, trade was likely to peak in the optimum transport months of summer. Indeed, the Figures demonstrate that the summer months were most prolific with half of all recorded voyages undertaken between May and August. However, this overall picture varied dramatically between ports. The number of coastal voyages at Swansea and Neath, close to the most developed regional coalfields, was remarkably stable throughout the year, with no significant or sustained fall off in shipments during the traditionally slack months between November and February.[99] Voy ges peaked between May and September, but this period only accounted for 60% of mineral shipments at both ports. Figure 2.7 emphasises the general pattern of stability for coal voyages clearing Neath between 1701 and 1704, which, despite some dramatic fluctuation between months,

Figure 2.5: Voyages with coal/culm from south Wales ports, sample year.

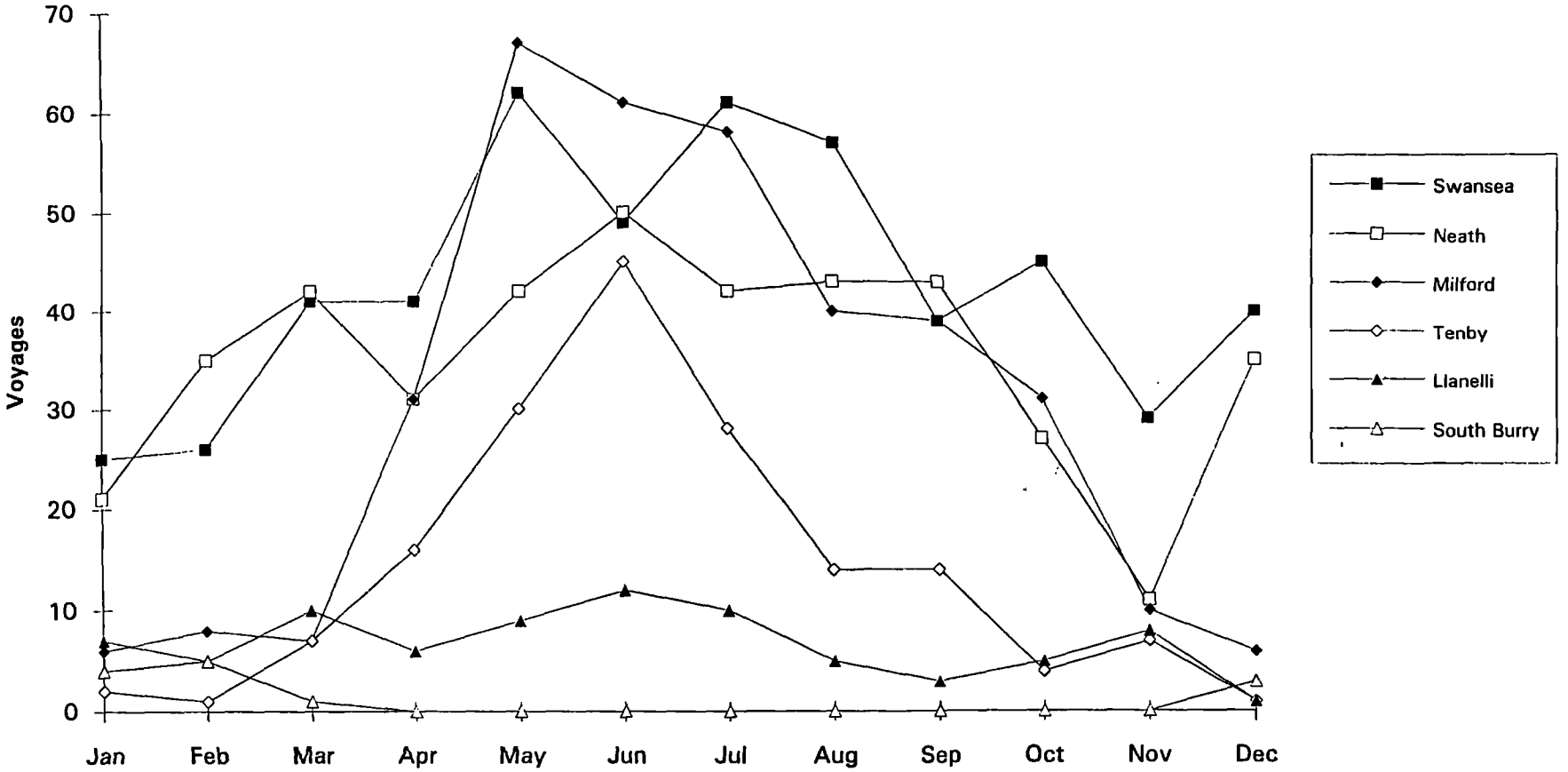


Table 2.6: Voyages with culm/coals from Tenby, by month, 1695-1702.

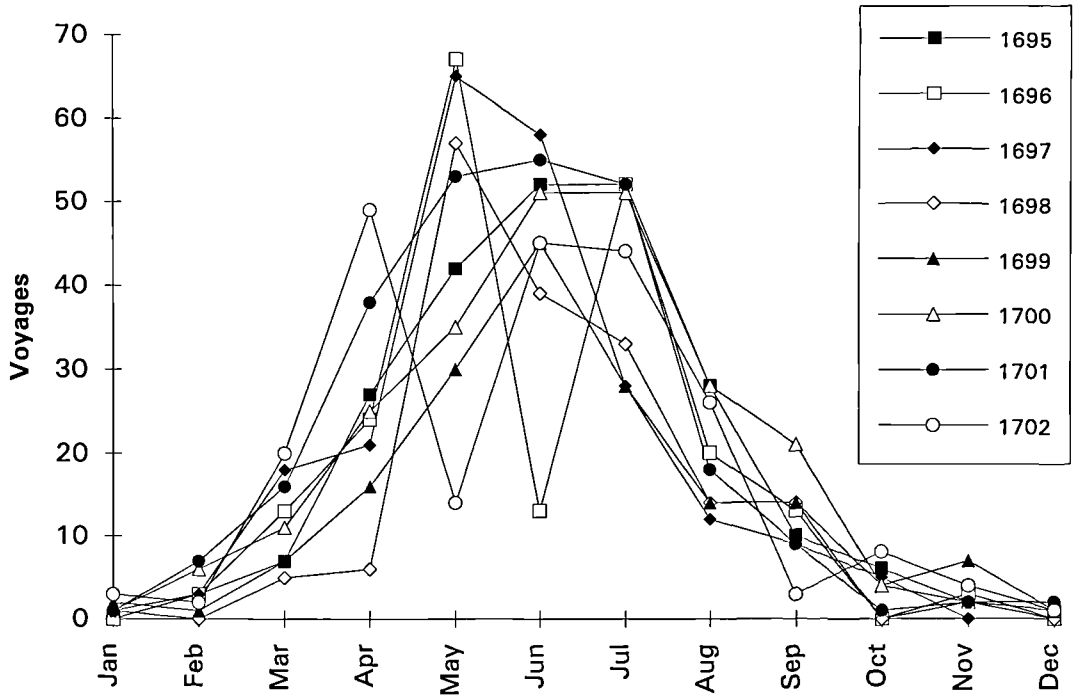
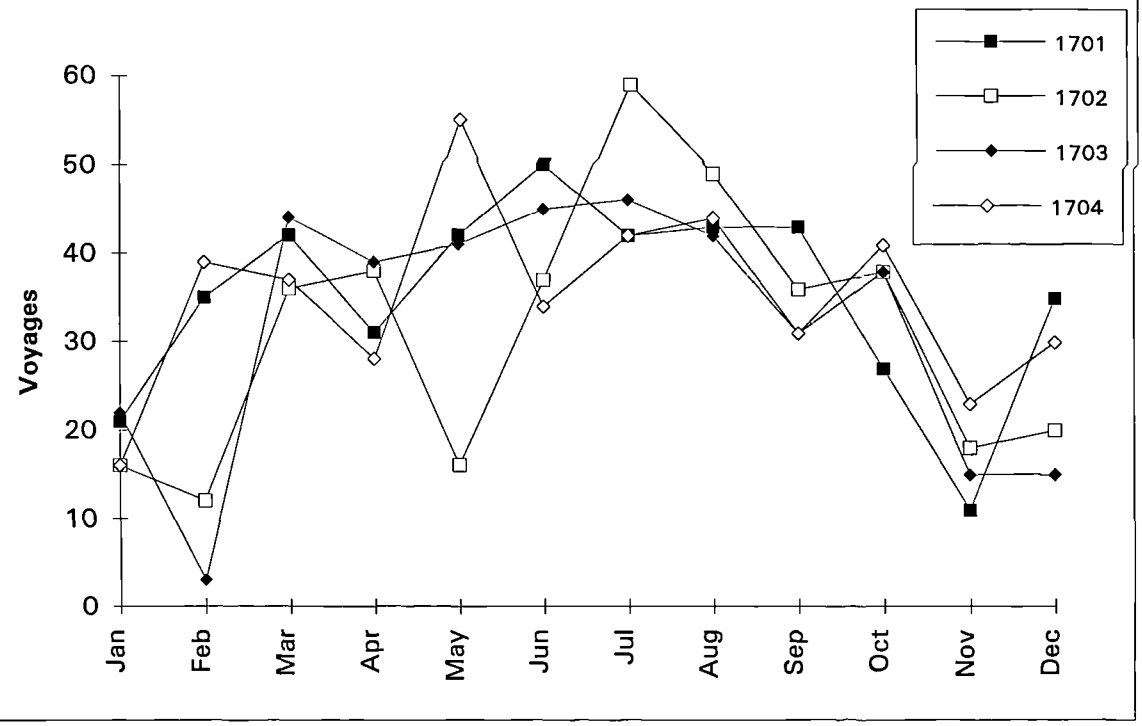


Table 2.7: Voyages with coal from Neath, by month, 1701-4



were only slightly biased towards the summer period. This steadiness was also reflected in the single year sample for Llanelli, whereas at South Burry, the part of Llanelli Customs port still attached to Swansea and Neath, the 13 recorded shipments were compressed into the winter months from December to March. The evidence of the Glamorganshire ports thus indicates that coal shipments operated on a more consistent level than in the east coast trade. This probably reflects the enclosed nature of the Bristol Channel, the effectiveness of short-haul coasting, and the development of both Swansea and Neath as efficient supply depots and harbours. It is also clear that the industrial concerns of the south west, notably salt-boiling, demanded constant levels of fuel throughout the year and, moreover, the south Wales ports were in position to meet these requirements.[100]

In contrast, a different seasonal pattern governed the trade of the culm ports of south-west Wales. Both Milford and Tenby were effectively closed as coal ports during the winter months with over 90% of voyages being dispatched between April and October. The three months from May to July were especially prominent accounting for over half and three-fifths of the total number of shipments respectively. At Tenby, the wider chronological sample enables seasonality to be demonstrated over eight years. Figure 2.6 indicates that, despite dramatic fluctuations in 1696 and 1702, coal voyages were effectively undertaken between April and July: the months between October and February accounted for merely 5% of the 1,707 voyages recorded with the decline in voyages recorded in August and September, reflecting the demands of harvest.[101] The seasonal constriction of trade at both ports can be seen in the relatively undeveloped nature of the Pembrokeshire hinterland. Despite the natural advantages of its site as an area of protected anchorage, Milford did not develop extensive harbour facilities until the later eighteenth century. What is more, its staple extra-regional trade, coasting around Land's End to the south coast of Cornwall and Devon, was likely to have suffered in winter weather conditions. Similarly, at Tenby the exposed strand site at Saundersfoot offered very little shelter to coasters in poor weather. Moreover, both ports suffered from the poorly capitalised, rural and

underdeveloped nature of Pembrokeshire mining. This factor, together with the problems of a poorly maintained system of inland transport, may have also restricted the output of anthracitic culm and the movement of accumulated stocks in the winter months.[102]

iv. Conclusion.

The analysis of the structural patterns of regional coasting has enabled the directional and seasonal basis to the coastal trade to be examined in more depth whilst demonstrating the coherence of the sample year and wider period under study. Coasting in the Bristol Channel formed a network of connections, interlocking a fluid hierarchy of ports. To a great extent, Bristol formed a major but not the only focus to trade, exerting a distinct almost gravitational pull upon the voyages of all the regional ports. A simple enumeration of voyages within the region in the sample year reveals that almost a quarter of all shipments were linked with Bristol. A further quarter was divided between the ports of Somerset and north Devon with Swansea and Neath and the ports under Milford accounting for 15% and 10% of intrinsic regional voyages respectively. For these ports, the coal trade represented a rival dynamic to the connections with Bristol, and in terms of frequency and tonnage occupied a rather more significant role. However, despite the importance of the Bristol-Gloucester axis, Severn ports featured in only 12% of regional voyages, whilst the ports of the Wye and Cardiff were important only in relation to their links with Bristol. At the periphery, the three Customs ports of north Cornwall were involved in only 4% of all recorded voyages.

This skeleton of connections has provided a framework through which the links underpinning coasting can be viewed. The Chapter has mapped out the seemingly erratic mass of voyages, but, apart from the most general of discussions, vessels' holds have not been filled. To comprehend the ramifications of trade fully the vast range of goods traded coastwise, not only the broad staples, but also the minutiae

of trade from actors' goods to young fustic, must be unpacked and examined with a critical eye.

Chapter 3: Cargoes, consignments and commodities: the regional trade in goods.

The previous sections have demonstrated that regional coasting operated within a complex framework governed in part by the economic imperatives of supply and demand and in part by more localised factors such as marketing, the nature of hinterlands, access to ports, and a number of contingent issues of which weather and war were perhaps the most persistent. This Chapter seeks to put flesh on the broad outlines of trade by providing an analysis of cargoes moving coastwise. The trade in goods addresses two important questions raised by earlier scholarship. Firstly, the nature of the various trades has to be re-examined in order to assess the extent to which regional coasting was universally dominated by low-cost, high-bulk staple goods. A second issue is the relative importance of the regional ports, and particularly the 'metropolitan' role of Bristol, in terms of the flows of commodities. Bristol has been seen as the major centre for the redistribution of nominally 'luxury' or 'consumerist' wares to the economically subject parts of the region. Although many studies have stressed this unequal commercial relationship, there have been disappointingly few attempts to determine the extent or nature of Bristol's coastal trade, especially in relation to the goods it dispatched to the region and received in return.[1]

The hypothesis that coasting was dominated by cargoes displaying a classically low cost to volume ratio has gained wide historical acceptance. Such an impression, derived from Willan's overview of coasting and supported by the great metahistories of the mineral and agricultural trades,[2] has been reinforced by recent research, notably Chartres' work on internal trade.[3] However, this view has been challenged on two fronts. On the one hand, studies of notionally lesser items of trade or 'consumables' has led somewhat tangentially to an interest in how such items were traded.[4] Secondly, the work of Wakelin and Wanklyn on the river Severn has stressed the multiform nature of traded goods,[5] and the study of probate inventories in this and other regions has suggested that a variety of high-value goods, the 'cloths, wools and

manufactures' typically carried overland according to Chartres, found their way into the shops of mercers, grocers and haberdashers through long-distance water transport.[6] None the less, we must ask whether this model can be transposed to a region with marked economic differences? The Severn and its lateral tributaries served a highly developed hinterland. In comparison, the Bristol Channel region was very much a heterogeneous economic assemblage that encompassed not only Bristol, the largest outport and, more questionably, the largest provincial town, but also economically marginal areas such as north Cornwall,[7] and south-west Wales.[8]

However, a cursory examination of regional trade does not appear to support the conclusions outlined for the Severn. The greater risk involved in coasting in terms of shipwreck or privateering, and the inconsistencies of tide and wind that could seriously delay coasters, would seem to mitigate against regular trade in highly friable, perishable or expensive goods that could bear the costs of overland trade. Regional coasting was also open to competition from quicker road carriage, especially in the south west where the relatively short trans-peninsula routes connected the cloth centres of south Devon, and in particular Exeter, to the legal wool ports of the Bristol Channel.[9] In addition, the large number of coal shipments has tended to reinforce the historical impression that regional coasting was largely confined to the carriage of single, bulk commodities. Yet, coal was only one of over 2,800 commodity terms recorded in the Port Books for the period under study. Although it must be acknowledged that for many ports coal, iron, metal ore, salt, or corn remained staple cargo items, the high-value composite shipments emanating not only from Bristol and Gloucester, but also from other regional distribution centres like Bridgwater and Minehead must not be underestimated.

Many commentators have sidestepped thorough discussions of traded goods in favour of more manageable studies of recognised, staple commodities. As with Port Book data in general, it has been the case that quantification and critical assessment has been limited by the explosion of information. Willan, for example, regarded the coastal trade of Bristol as constituting a formless collection of miscellaneous goods

which 'scarcely lends itself to statistical treatment'.[10] Minchinton re-emphasised this assessment, remarking that 'the cargoes of goods sent coastwise ... were so various to defy description', adding that simply listing the main trades, 'does little to convey the immense range of articles sent out from Bristol'.[11] Given this lead, it is not surprising that the tendency to reconstruct an impression of trade from an uncritical rummage through the hold of a randomly selected 'typical' coaster continues to dominate many studies.[12] Thus, Williams lists the cargoes of Bristol freighters to illustrate the 'multifarious items ... imported into Glamorgan from the West of England [which] signalled the growing needs of certain sectors of an agrarian society which was closely geared to the West of England'. This was largely manifest in 'the most sophisticated articles of consumption that the Bristol market could offer'.[13] However, if the trade of the Bristol Channel is to be put into any coherent perspective, the range, importance and sophistication of *all* goods and not merely generic examples - the easily categorised staple commodity and the high value consumer item - must be assessed.

i. Disaggregating diverse cargoes: the range of traded goods.

The diversity of commodities and commodity combinations recorded in the Port Books makes the task of providing a coherent overview difficult. Nevertheless, the 'multiplicity' of descriptions can be analysed quantitatively if a careful critique is applied to the number of commodities and commodity strings recorded.[14] Tables 3.1 and 3.2 list the number of commodity descriptions that appear either singly or in multiple combination in the Port Books. This forms a numerical representation of the precise way in which Customs clerks noted down cargoes. As such it outlines raw data - the basic building block of the study of cargoes - but does not take into account the most obvious areas of duplication. Thus, the string 'linen + woollen + mercery + upholstery + cutlery + haberdashery' which appears twice in the Bristol Port Books for 1699 is counted as an entity itself, even though each constituent element is also enumerated individually. In the second column of the Tables such multiple

expressions have been removed, though care has been taken to ensure that items that only occur in such strings have also been added. For example, in the 1699 Bristol record, the commodity, 'hose', which is only found in the phrase 'bedding + apparel + linen + hose' is included in the list of terms. The other elements have been discounted, however, as they occur elsewhere.

In column three, all obvious synonyms have been excluded to give the number of commodities traded at each port. Undoubtedly, extensive problems exist in formally combining or excluding data on these grounds and for this reason every care has been taken to avoid misinterpretation through hindsight or the desire to be semantically over-precise. Thus, 'coal', 'smiths coal', 'stone coal', 'Tenby coals', and 'culm' have all been treated as distinct and discrete commodities, as there is no way of distinguishing between clerical inconsistencies and different grades of mineral. However, where reasonably equivalent descriptions occur as, for instance, in the terms 'Newfoundland cod fish', 'Newland cod fish', and 'Newfoundland cod English taken and made', the commodity list has been duly amended. Although this concern may appear excessively fastidious, it is designed to avoid the pitfall of aggregating commodities where seemingly insignificant descriptors - between 'coals' and 'smiths coal' in the example above or 'chairs' and 'green chairs' - may have conferred subtle yet perceptibly different meanings.[15]

A further revision to the presentation of the data has been to exclude commodities that occurred only once in any given year, in order to eliminate goods which may have assumed an importance far greater than their commercial status. The rationalisation of the figures has a dramatic effect. The number of discrete commodities occurring more than once clearing outwards in the sample year shows a fall which varies between 34% at Gloucester and 71% at Padstow, compared to the figures of total recorded goods.[16] For coastal impo ts, a fall of between 37% at Minehead to 59% at Ilfracombe is apparent, although the absence of figures for Bristol, Swansea, Neath and Cardiff - ports serving major hinterlands - is a significant omission.

Table 3.1: Numbers of commodities exported coastally from regional ports, sample year.

	Strings	*Terms*	*Commods*	*Commods > 1 record*	*No. Terms > 1 record*
Bristol	676	516	426	269	4955
Gloucester	305	251	214	141	2277
Milford	115	106	94	60	825
Bridgwater	143	135	117	53	335
Minehead	112	113	99	53	316
Cardiff	48	48	44	26	212
Bideford	54	54	52	25	145
Carmarthen	53	50	49	23	112
Swansea	73	74	66	18	705
Tenby	44	39	34	18	243
Chepstow	25	25	21	18	350
Barnstaple	53	55	52	16	85
Neath	26	27	24	9	448
St. Ives	17	17	14	8	72
Ilfracombe	25	23	16	5	66
Padstow	13	15	14	4	38
Mounts Bay	10	10	10	2	5
Llanelli	4	4	3	1	78
South Burry	3	3	3	1	13
Cardigan	33	14	14	11	87
Aberdovey	2	2	2	1	4
Liverpool	211	210	182	99	1041

Table 3.2: Numbers of commodities imported coastally at regional ports, sample year.

	Strings	*Terms*	*Commods*	*Commods > 1 record*	*No. terms > 1 record*
Gloucester	312	271	226	138	1808
Bridgwater	255	219	182	110	1074
Minehead	216	189	158	99	868
Milford	166	152	134	66	293
Bideford	104	103	94	52	331
Carmarthen	106	98	82	49	213
Barnstaple	104	101	93	42	387
St. Ives	56	57	52	33	121
Ilfracombe	82	84	75	31	202
Padstow	73	64	56	31	233
Tenby	49	50	48	22	57
Chepstow	25	25	21	12	72
Mounts Bay	9	9	9	4	17
Cardigan	4	4	4	3	19
Aberdovey	12	14	13	6	12
Liverpool	259	245	213	121	942

These methodologies have enabled an effective assessment of trading levels to be abstracted from the sprawl of commodities and commodity terms recorded in the Port Books. Even so, the diversity of the sample is important: not only were many distinct commodities recorded frequently, but they were also listed for a surprisingly large number of ports. The most important regional centre in terms of both the number of discrete commodities and regular goods recorded is revealed to be Bristol. This is perhaps unremarkable given its role in distributing regional and overseas goods. The range of these coastally traded goods are reproduced in Appendix 2. This provides a snapshot of the full panorama of late seventeenth and early eighteenth century trade, ranging from German linen, Norway deals, Iberian wine, iron and wool, Gallipoli oil, Virginian tobacco to domestic goods like linen, mercery goods, haberdashery, cider, spirits and a wide range of metals and ores. Yet, the diversity of goods being traded was not wholly limited to Bristol: Minehead in 1699-1700 was trading such items as books, brandy, dowlas, dunsters, kelp, ox bows, red herrings, Spanish wine, serges, and tobacco, whilst Milford was plying ale, beeswax, cheese, flannel, honey, leather, rabbit skins, oysters, stockings and tobacco in 1699. This was in addition to the bulk staples - agricultural goods and culm - traditionally associated with such ports.

The principal characteristics of the Tables are threefold. In Table 3.1 the smaller creeks, in terms of voyages, are almost unanimously confirmed as having essentially limited commodity trades. For example, the rather one-dimensional coastal trade of Ilfracombe and the Cornish ports is reflected in very low numbers of discrete regularly occurring commodities and, more obviously, in the number of commodity terms occurring more than once. The exceptions to this pattern are at Carmarthen, where the diversity of the port's agricultural hinterland overrode the poverty of the outwards sample, and Cardiff, where despite the low number of voyages recorded, 26 individual commodities were listed. These figures were noticeably higher than for the Glamorganshire coal ports, or Barnstaple, Bideford, and Chepstow, although deficiencies in the Port Book record may account for the low

number of commodities listed at Chepstow. However, the more complete record for the trade of the north Devon ports, which included full details of non-coquet traffic, is not paralleled by substantially more commodities being registered. This confirms that the ports exported coastally a much more limited range of commodities than their Somerset rivals.[17]

However, the Table reveals ports such as Cardiff and to an extent Bideford to be distinctively different from the second rank of centres, comprising Bridgwater, Minehead, and Milford - distributing centres with large local and extra-regional hinterlands. At Milford, access to the Pembrokeshire corn lands and inshore fisheries ensured that trade was more diverse than the staple exports of culm clearing nearby Tenby, whilst at the Somerset ports inland routes combined with an intermittent overseas trade to increase the number of commodities traded, often as back-cargo to south Wales, Liverpool or Bristol. In contrast, the number of commodities exported coastally by these ports was markedly inferior to the extensive series of goods clearing Bristol and Gloucester. Over four times as many regularly occurring commodities were recorded at Bristol and over twice as many at Gloucester than at Milford, the next most well represented regional port. The polarisation of trade implied by these figures is also reflected in the total number of commodity terms recorded at the three ports: Bristol clearly outstripped Gloucester which in turn was far more significant than Milford.

The pronounced hierarchy of regional centres found in coastal exports is somewhat compressed and evened out when the number of commodities traded inwards is assessed. Table 3.2 reveals Gloucester as the most important port, both in terms of frequently occurring commodities and total number of commodity terms recorded, though again, data for Bristol's inwards trade is lacking. Yet in this analysis the Somerset ports are also well represented. In the case of Minehead, this was due to the diversity of cargoes from Bristol and, to a lesser extent, from Gloucester. Both Minehead and Bridgwater served a wide local hinterland which was dependent upon the ports for coal and salt and a variety of overseas goods and domestic manufactures

obtained mainly through Bristol. For the same reason, the other south-west of England ports were well represented. Apart from the creeks at the greatest distance from Bristol - Mount's Bay, Cardigan and Aberdovey - only Chepstow appears to have had a significantly low level of coastal imports. This again may demonstrate the erratic methods of recording cargoes at this port, rather than the actual status of trade: Andrews affirms from other sources that the port was commercially buoyant at this time which clearly is not reflected in the trade in goods.[18]

The Tables also reveal the importance of Bristol and Gloucester as the major regional entrepot and the economic and administrative filter of the Severn navigation respectively. In terms of traded commodities, no other centre in the region can be seen to match the size or diversity of Bristol's trade and the inwards trade of all regional ports was greatly reliant upon extensive, multi-value cargoes from Bristol. A comparison with the coastal trade of Liverpool emphasises these points. Whilst both Bristol and Liverpool recorded high numbers of voyages clearing outwards in 1699, Liverpool does not appear to match the 'metropolitan' role of Bristol in the extent and diversity of its cargoes within its natural coastal hinterland of the north west and north Wales. In spite of its burgeoning importance in the overseas trades and the growth of its immediate hinterland in this period, (factors emphasised by Barker and Clemens as vital to the later growth of the port), the number of goods Liverpool distributed coastally was markedly low and inferior not only to Bristol, but also to Gloucester.[19] This position is somewhat ameliorated in the case of goods imported coastwise. Here, Liverpool can be seen as absorbing raw materials, producer goods and agricultural staples from its littoral hinterland for both local and overseas consumption. None the less, in terms of the number of commodities recorded this trade was still secondary to Gloucester and roughly comparable to Bridgwater and Minehead. Given the more humble trading parameters of the Somerset ports, this may indicate that, in contrast to Bristol, Liverpool was more successfully challenged by proximate ports, notably Chester and Lancaster, in the control of the trade of its domestic hinterland and Ireland.[20]

Figure 3.1: Coastally exported goods (recorded > once), 1695-1704.

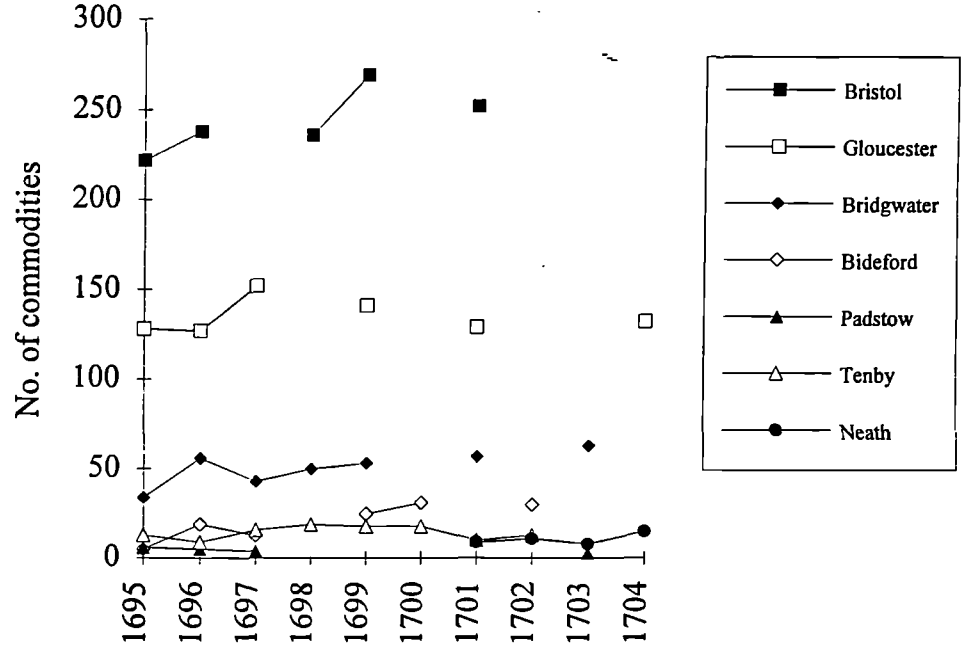
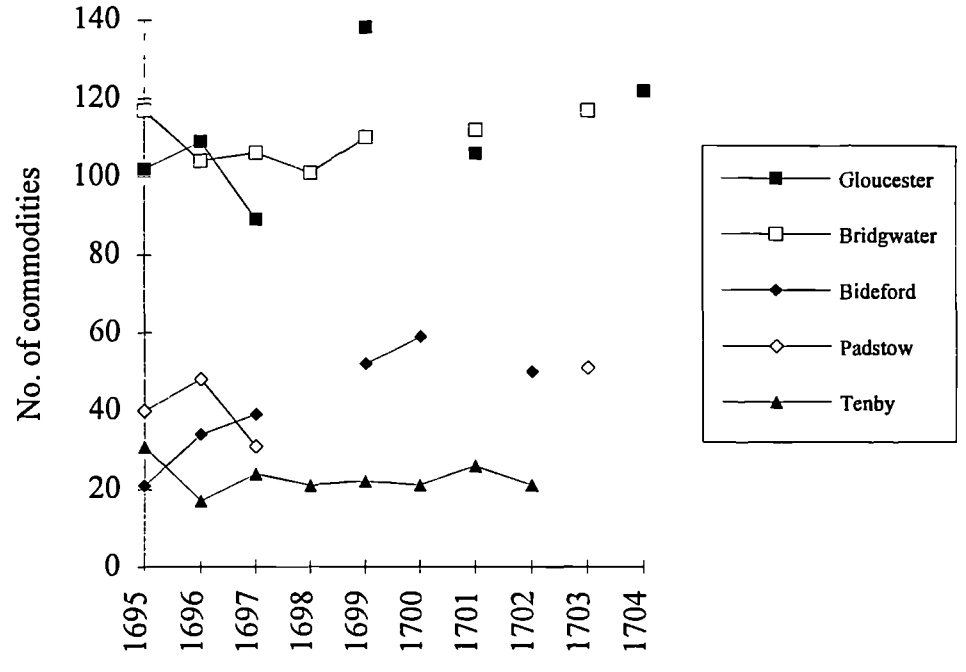


Figure 3.2: Coastally imported goods (recorded > once), 1695-1704.



In addition to the sample year, a longitudinal survey of goods carriage is included in Figures 3.1 and 3.2 which serves to contextualise the sample year. In general terms the figures show broad levels of consistency. At Bristol, for example, there is only a 17% difference in the number of regularly occurring commodities between the lowest figure (for 1695) and the figure for the sample year. A similar picture is revealed for coastal exports at Gloucester and for coastal imports at Bridgwater, where less than 10% separates the sample year from the lowest recorded year (1696 and 1698 respectively). There are, however, some expected troughs in the figures. Privateering between 1695 and 1697 probably disrupted coasting in the outer reaches of the Bristol Channel and may account for the low numbers of regularly occurring commodities recorded amongst the coastal exports of Bridgwater, Bideford and Tenby. In addition, the later years of the decade saw widespread dearth in the region, particularly in Wales, which coupled with the problems of recoinage in 1696 and the residual effects of a lack of acceptable specie locally, may have impacted upon the commodity trades. Similarly, renewed hostilities in 1702 may well have affected trade, although this does not appear to have impinged significantly upon the range of commodities traded: if anything a slight increase in the total numbers traded regularly at the below-Holms ports was recorded. In contrast, 1699 remained the peak of trade at the two above-Holms centres, Gloucester and Bristol, where the reciprocality of trade was a major factor in the high numbers of both shipments and commodities recorded.

The methods described above have demonstrated important ways in which commodities traded coastally can be viewed and disaggregated. However, it is necessary to relate commodities to the number of voyages recorded at the regional ports in order to reconstruct a picture of the diversity and complexity of cargoes. In Tables 3.3 and 3.4 an index of the average cargo, or consignment, carried per voyage is established. For this analysis, the total number of strings recorded in the Port Books is used, not merely those that occurred regularly, as this would tend to underplay the average consignment recorded at the more minor ports. Although regional Customs

Tables 3.3 and 3.4: Commodity terms per voyage, sample year.

3.3: Coastal exports.

	Commodity terms	*Voyages*	*Mean*
Bristol	5367	491	10.93
Milford	895	117	7.65
Cardiff	234	31	7.55
Gloucester	2475	332	7.45
Carmarthen	147	29	5.07
Bridgwater	428	95	4.51
Minehead	366	127	2.88
Bideford	179	72	2.49
Barnstaple	129	54	2.39
St. Ives	85	43	1.98
Padstow	47	28	1.68
Ilfracombe	72	46	1.57
Tenby	270	176	1.53
Swansea	765	531	1.44
Mount's Bay	5	4	1.25
Neath	467	437	1.07
Chepstow	376	345	1.09
South Burry	15	13	1.15
Llanelli	81	81	1.00
Cardigan	110	96	1.15
Aberdovey	5	5	1.00
Liverpool	1166	306	3.81

3.4: Coastal imports.

	Commodity terms	*Voyages*	*Mean*
Tenby	94	10	9.40
Milford	423	54	7.83
Gloucester	2005	294	6.82
Carmarthen	262	44	5.95
Bridgwater	1160	331	3.50
St. Ives	171	51	3.35
Minehead	1012	348	2.91
Padstow	263	129	2.04
Bideford	403	225	1.79
Barnstaple	457	266	1.72
Ilfracombe	246	129	1.91
Mount's Bay	22	13	1.69
Chepstow	85	65	1.31
Cardigan	21	14	1.50
Aberdovey	20	12	1.67
Liverpool	1107	203	5.45

practice may slightly inflate these figures,[21] a clear indication of the diversity of cargoes is given for the region.

In particular, the importance of Bristol cargoes is confirmed. In 1699, shipments clearing Bristol carried on average just under eleven commodities or commodity descriptions, a figure that masks the occasional single-commodity shipment of coal or wool in returning Severn trows. It is also apparent that Gloucester dealt with multifarious cargoes with around seven separate descriptions of goods recorded entering and clearing the port in the sample year. However, the Tables emphasise that large and complex cargoes were widespread. At Milford both outwards and inwards trade was characterised by a wide range of commodities carried, and although Cardiff and Tenby (inwards) may be regarded as aberrant figures resulting from the limitation of the sample,[22] Carmarthen, Bridgwater, and St. Ives (inwards) can be seen as trading quite extensive cargoes. Undoubtedly, the dominance of a single trade or trades such as earthenware and copper ore at Bideford and Barnstaple, fish at Ilfracombe, and coal and culm throughout the region have depressed the representation of goods traded per shipment at many of the smaller ports. Similarly, the low figures for Llanelli, Cardigan and Aberdovey reveal the presence of single commodity voyages together with a high incidence of blank fields in which no data have been given. In spite of this, the figures for the major Bristol Channel centres reveal that cargoes were not defined by single bulk shipments.

The series of Tables and Figures discussed above provide an important outline of trade. Despite the ontological problems involved in the methods of quantification, the results can be seen as significant indicators of the relative importance of regional ports in the coastal trade. To this extent, they are exercises in quantitative semiology, defining the symbols of and providing sample pathways through data that have been in the past dismissed as either too multiform to permit analysis or too uniform to warrant detailed disaggregation. None the less, it is clear that the bulk carriage of single staple items did not dominate the trade of the region as fully as previous studies

would infer. Even at centres strongly identified with the trade in coal, coasting was often characterised by multi-faceted and more diverse forms of shipment.

ii. Goods and ports: regional commodities and trades in profile.

It has been demonstrated that the range of goods traded, and moreover traded regularly, was far more extensive than has been generally assumed. Some insight has also been gained into the relative commercial position of the ports within the region. However, a more sophisticated analysis is needed if the regional basis to the trade in goods is to be appraised critically. In more vernacular terms, the historian has to uncover the nature and species of goods traded by separating not only the wood from the trees, but also the walnut from the lignum vitae.[23] Thus, the significance of each commodity must be defined without distorting the broad and subtle matrix of regional trade.

To facilitate this, a classification system has been devised to group commodities according to eight generic categories. Thus, the 2,793 commodities recorded in the regional sample have been apportioned amongst the following classes.: agricultural goods; crafts and manufactures; extractive goods (including minerals and unworked stone); food and drink, (including apothecary ware and drugs); metals; fisheries; textiles; and wood. A further 24 commodity terms were excluded for taxonomic reasons such as ambivalent meaning or cross- class generality.[24] Similarly, the very occasional abbreviation of cargoes to such forms as 'all sorts of goods' or 'corn etc' have been omitted.

The system provides the base to a flexible, computerised look-up table annexed to the main databases. Although the workings of this table in terms of technical structure and methodological procedure have been described and defended in sufficient detail elsewhere, a number of general points need to be addressed.[25] Firstly, goods have been classified in accordance with their broadly defined modes of production and exchange rather than their function or use. For example, cider and

perry are treated as agricultural staples and not victuals, primarily because in the period being studied, production was closely tied to the farm.[26] In contrast, the production of English spirits and strong waters, which was focused upon Bristol and relied upon double distilled cider and domestic low wines, was more capitally intensive.[27] All forms of spirits are thus treated as drinks rather than agricultural produce. Similarly, salt is classified as an extractive good even though it was occasionally processed away from the point of extraction and initial refining.[28] Secondly, data expressed here in tabular form relate to the total number of shipments carrying each class of commodity. No attempt has been made to gauge comparative tonnages or worth: 10 lb of tobacco has the same notional, unitary value as 10,000 lb.[29]

Given these caveats, the system of classification provides a powerful yet versatile means of determining the importance of groups of commodities to the economic articulation of the region. Tables 3.5 and 3.6 present these data in relation to the number of voyages and the percentage of each class of commodity recorded per shipment for each port. The Tables reveal a substantial degree of commercial reciprocality: in such an integral commercial enclave as the Bristol Channel, one port's coastal exports were often another's imports. To address this issue, and obviate potential areas of repetition, emphasis has been placed upon the analysis of coastal exports in preference to the more imperfect sample of inwards shipments. The discussion of coastal imports is thus focused upon filling the gaps not covered by coastal exports. Such an approach has sought to construct a composite of trade which takes into account both the evidence of extra-regional ports and non-coquet shipments. The Tables also remain faithful to the literal record of the Port Books: there has been no attempt to clumsily reconstruct trade by relationally stitching together fragments of Port Books.[30] Where analysis has indicated serious deficiencies in the record, this has been emphasised in the text and only incorporated into the abstracted figures illustrating specific commodity trades.

Table 3.5: Voyages clearing Bristol Channel ports by commodity class, sample year

	Total	Agric.	Crafts	Extract.	Food	Metals	Fisheries	Textiles	Wood
Bristol	491	271	394	184	413	313	116	259	150
Gloucester	332	226	260	199	237	153	8	200	200
Bridgwater	95	84	39	11	45	17	10	19	9
Minehead	127	58	29	16	34	8	48	42	2
Ilfracombe	43	0	3	7	1	0	37	0	1
Barnstaple	54	6	23	26	14	3	7	9	4
Bideford	72	16	35	24	16	6	19	7	2
Padstow	28	0	2	26	0	13	1	2	0
St. Ives	43	2	8	39	1	14	8	0	0
Mounts Bay	4	1	1	2	0	3	2	0	0
Milford	452	101	25	364	63	15	22	16	3
Carmarthen	29	25	7	2	10	5	1	2	2
Tenby	176	39	7	171	12	2	6	11	0
Llanelli	81	0	0	79	1	1	0	0	0
South Burry	13	1	0	13	0	0	0	0	0
Swansea	531	102	36	516	7	20	3	14	14
Neath	437	16	7	422	2	9	0	0	3
Cardiff	31	31	28	8	6	6	4	7	1
Chepstow	345	270	6	19	0	94	0	0	1
Liverpool	306	111	82	197	93	45	11	37	26

Percentage of voyages clearing Bristol Channel ports by commodity class, sample year

	Total	Agric.	Crafts	Extract.	Food	Metals	Fisheries	Textiles	Wood
Bristol	491	55	80	38	84	64	24	53	31
Gloucester	332	68	78	60	71	46	2	60	60
Bridgwater	95	88	41	12	47	18	11	20	10
Minehead	127	46	23	13	27	6	38	33	2
Ilfracombe	43	0	7	16	2	0	86	0	2
Barnstaple	54	11	43	48	26	6	13	17	7
Bideford	72	22	49	33	22	8	26	10	3
Padstow	28	0	7	93	0	46	4	7	0
St. Ives	43	5	19	91	2	33	19	0	0
Mounts Bay	4	25	25	50	0	75	50	0	0
Milford	452	22	6	81	14	3	5	4	1
Carmarthen	29	86	24	7	35	17	3	7	7
Tenby	176	22	4	97	7	1	3	6	0
Llanelli	81	0	0	98	1	1	0	0	0
South Burry	17	8	0	100	0	0	0	0	0
Swansea	531	19	7	97	1	4	1	3	3
Neath	437	4	2	97	1	2	0	0	1
Cardiff	31	100	90	26	19	19	13	23	3
Chepstow	345	78	2	6	0	27	0	0	0
Liverpool	306	36	27	64	30	15	4	12	9

Table 3.6: Voyages entering Bristol Channel ports by commodity class in sample year

	Total	Agric.	Crafts	Extract.	Food	Metals	Fisheries	Textiles	Wood
Gloucester	294	148	183	105	186	152	70	99	68
Bridgwater	331	118	74	282	47	57	19	46	45
Minehead	349	82	91	260	59	48	7	38	56
Ilfracombe	132	19	17	93	14	3	10	5	19
Barnstaple	266	45	29	233	30	15	1	10	7
Bideford	225	31	24	185	22	11	0	10	9
Padstow	129	16	11	121	8	8	2	6	3
St. Ives	51	7	15	45	5	5	1	2	9
Mounts Bay	13	1	1	7	0	0	0	0	8
Milford	54	22	27	17	17	18	5	21	22
Carmarthen	44	8	25	24	16	16	9	13	9
Tenby	10	5	6	2	7	6	0	6	4
Chepstow	65	6	4	39	13	10	0	0	0
Liverpool	203	135	46	36	86	45	22	27	31

Percentage of voyages entering Bristol Channel ports by commodity class in sample year

	Total	Agric.	Crafts	Extract.	Food	Metals	Fisheries	Textiles	Wood
Gloucester	294	50	62	36	63	52	24	34	23
Bridgwater	331	36	22	85	14	17	6	14	14
Minehead	349	23	26	74	17	14	2	11	16
Ilfracombe	132	14	13	71	11	2	8	4	14
Barnstaple	266	17	11	88	11	6	*	4	3
Bideford	225	14	11	82	10	5	0	4	4
Padstow	129	12	9	94	6	6	2	5	2
St. Ives	51	14	29	88	10	10	2	4	18
Mounts Bay	13	8	8	54	0	0	0	0	62
Milford	54	41	50	32	32	33	9	39	41
Carmarthen	44	18	57	55	36	36	21	30	21
Tenby	10	50	60	20	70	60	0	60	40
Chepstow	65	10	6	60	20	15	0	0	0
Liverpool	203	67	23	18	42	22	11	13	15

In Tables 3.5 and 3.6 most classes of commodity are well represented, with Agricultural goods and Extractive trades central to coastal exports. Agricultural goods were represented in over half of all shipments from Bristol, Gloucester, Bridgwater, Carmarthen, Cardiff and Chepstow; ports with access to major agrarian areas, champion grounds, orcharding, and good pasturage or, as in the case of Bristol and Gloucester, providing the commercial interface between differing zones of production. At Bristol, the figures are supplemented by smaller quantities of overseas goods, such as cotton wool from America and the West Indies, Irish wool and hides, and Spanish merino wool.[31] Such items also formed a rather smaller share of goods traded at ports, notably Minehead and Bridgwater, which pursued an active overseas trade.

The principal collective constituent of this class - grain, cereals and farinaceous goods - is analysed in Table 3.7.[32] The Table represents total quantities of grain crops converted to the standard Winchester bushel,[33] expressed in terms of the number of shipments carrying grain and voyages clearing each regional port in the sample year. Grain played a singularly important role in trade, appearing in over half the shipments clearing Gloucester, Chepstow, Bridgwater, Carmarthen, Cardiff and Cardigan, and forming a significant part of the total quantity of goods clearing Milford, Minehead and Bideford. At Cardiff, where recorded trade was dominated by the market demands of Bristol, grain featured in every shipment. Similarly, grain, destined mainly for west and north-west Wales and the north-west of England, was the principal constituent of cargoes shipped from Cardigan, Milford and Carmarthen. However, the ports serving the littoral strip of north Cornwall, an area in general oriented to subsistence farming, did not trade heavily in grain or Agricultural goods. In the sample year, Tables 3.6 and 3.7 reveal that the ports from Mount's Bay as far east as Ilfracombe were, with the notable exception of Bideford, net importers of this class of goods. Thus, both Padstow and Ilfracombe did not export any agricultural goods coastally, only one grain shipment cleared St Ives, and two boats departed Barnstaple with small amounts of grain on board. In contrast, Bideford was a significant and continuous exporter of grain surpluses, largely due to its access to the

Table 3.7: Grain, cereal and fodder crops (in bushels) traded from regional ports by destination, sample year.

	Bristol	Severn	Somerset	N.Devon	Cornwall	Pemb/Carm	Swansea/Neath	Cardiff	Wye	Extra-Reg.	Unknown	Total
Gloucester	67396	-	1762	560	-	480	-	2340	24	-	209	72771
Chepstow	70418	678	160	400	-	-	-	-	-	-	-	71656
Milford	3036	1602	-	3036	-	1100	350	-	-	48290	200	57614
Bridgwater	7561	3130	2114	2847	-	420	427	-	745	18185	-	35429
Carmarthen	918	-	-	-	-			-	300	17507	580	19305
Minehead	8793	6456	330	200	-	46	114	-	13	900	500	17352
Cardiff	14137	-	-	-	-			-	-	-	-	14137
Bideford	2243	-	-	-	-	180		-	-	9493	-	11916
Bristol	-	4353	-	-	-	10	20	104	60	1905	-	6452
Tenby	673	-	-	144	-	-	450	-	-	2320	380	3967
St. Ives	-	-	-	970	-	-	-	-	-	-	-	970
Barnstaple	235	300	-	-	-	-	-	-	-	-	-	535
Swansea	150	-	-	10	10	-	-	-	-	32	10	212
Neath	30	-	-	-	30	-	-	-	-	-	-	60
	175589	16519	4366	8167	40	2236	1361	2444	1142	98632	1879	312374

Shipments of grain and cereal crops from regional ports by destination, sample year.

	Bristol	Severn	Somerset	N.Devon	N.Cornwall	Pemb/Carm.	Swansea/Neath	Cardiff	Wye	*Extra-Reg.*	*Unknown*	*Total*
Gloucester	189	-	6	1	-	1	-	3	1	-	2	203
Chepstow	232	2	1	1	-	-	-	-	-	-	-	236
Milford	11	1	-	16	-	1	1	-	-	63	1	94
Bridgwater	27	14	2	3	-	2	7	-	2	18	-	75
Carmarthen	5	-	-	-	-	-	-	-	1	14	2	22
Minehead	36	8	1	1	-	2	2	-	1	1	1	53
Cardiff	31	-	-	-	-	-	-	-	-	-	-	31
Bideford	5	-	-	-	-	1	-	-	-	8	-	14
Bristol	-	30	-	-	-	1	1	2	2	6	-	42
Tenby	3	-	-	3	-	-	1	-	-	2	1	10
St. Ives	-	-	-	1	-	-	-	-	-	-	-	1
Barnstaple	1	1	-	-	-	-	-	-	-	-	-	2
Swansea	1	-	-	1	1	-	-	-	-	1	1	5
Neath	1	-	-	-	1	-	-	-	-	-	-	2
	542	56	10	27	2	8	12	5	7	113	8	790

improved arable grounds south and west of the Torridge.

In the case of the south Wales coal ports, historians' concentration on Extractive Goods has caused the trade in agricultural commodities to be overlooked. Yet, significant quantities of butter were shipped from Swansea with a rather lesser quantity emanating from Neath. In contrast, at Milford and Carmarthen, not only was corn exported coastally, but livestock, hides, skins, wool and horns formed important items of trade. With regard to coastal imports, only at Tenby, (where the sample is very limited), and at Gloucester, which served the extensive Severn hinterland, are Agricultural goods found in the majority of shipments. The presence of the class in significant quantities in the coastal trade of Liverpool reveals the importance of the port both in dispatching local and particularly Irish produce to the north-west and as the recipient of back-cargo from Wales and Somerset.

The trade in Extractive goods, however, appears to be central to many ports in the region. Understandably the class was vital to the principal Welsh coal ports - Milford, Tenby, Llanelli, South Burry, Swansea and Neath - yet it also represented an important constituent in trade clearing Gloucester, Bristol, and the north Devon and Cornish ports. At these ports, coastally re-exported, locally refined, and foreign salt; a wide range of metal ores, and stone explain the important position of the class. Total imports reveal similarly impressive figures. If the partial and insignificant samples of Tenby and Mount's Bay are excluded, Extractive goods were present in excess of a third of all inwards shipments. Again, the Tables are weighted towards coal imports, particularly at the Cornish ports, although the increasingly high levels of salt shipped through Gloucester and Liverpool account for the much of the Extractive Goods entering the ports of south-west Wales. Moreover, a sizeable proportion of the class was carried under letpasses and other forms of lesser coastal documentation and must therefore be under-recorded. This was especially so for such goods as quarried stone - hilling stones and rags, millstones and paving stones - which occur frequently as coastal imports in the Somerset and Devon Port Books.[34]

Food and Drink and Crafts and Manufactures were concentrated on the main

centres of population and production. Bristol, as the most developed and populous centre of the region, monopolised the trade in comestibles. By the late seventeenth century its range of industrial and manufacturing functions were unsurpassed in the region; the city possessed important processing, distilling, refining and distributive industries that fed directly into the coastal trade. Similarly, its control over imported foodstuffs was represented in its large percentage share of the class in all measures of regional trade. Over 84% of all voyages clearing the port in 1699 carried something from a very extensive range of victuals, including tobacco, wine, sugar, brandy, rum, spirits, spices, (often subsumed under the generic term 'grocery'), and drugs and apothecary wares. Yet Bristol did not wholly dominate this trade. Bideford and Barnstaple were important local entrepots for tobacco, Bridgwater and Minehead maintained a minor trade in wine, tobacco and grocery, whilst at all ports the production and shipping of malt was an important commercial staple. This was especially true of Carmarthen and of Gloucester, through which the large malting centres of Tewkesbury and Worcester traded. The position of Liverpool is somewhat different. Whilst the port was undoubtedly the predominant centre for overseas trade in the north-west, and thereby performed a similar redistributive function within its hinterland, Liverpool dealt with a significantly lesser share of these commodities than Bristol. Items of Food and Drink were present in less than a third of all coastal shipments clearing Liverpool, being significantly outweighed by the high representation of the class among coastal imports.

Crafts and Manufactures describes a class of producer goods and finished articles that were either worked or wrought as distinct from items that remained in a raw state. Thus, the class comprises a miscellany of commodities. These ranged from highly developed items of industrial production that demanded sustained levels of capital investment in plant and raw materials, such as glass and glassware and soap-boiling, through goods of what might be termed 'proto-industrial' production, like local earthenware or shoe-making, to smaller rural by-employments and handicrafts such as chair-making. Gloucester featured strongly in this class with over three-

quarters of cargoes exported coastally carrying such goods. The bulk of these emanated from Bewdley, the port serving Birmingham and the adjacent hardware areas, or from Worcester and Shrewsbury, the most populous river ports. Similarly, the larger ports of the south-west figured strongly. Earthenware from Bideford and Barnstaple constituted the bulk of both centres' coastal exports and the shipment of soapers' ashes from Minehead and Bridgwater was also prominent. At Cardiff the local specialism of stocking-knitting and a rather more sporadic trade in apparel and 'recycled' craft wares remained a locally important component of coastal shipments.[35]

The trade in Metal Producer goods again reveals the importance of the axis between Bristol and Gloucester. At Gloucester, 152 inwards shipments (some 52% of total voyages) mostly from Bristol carried the class. In the main, goods were bound for Bewdley, the major entrepot for the expanding west Midlands industrial area. Iron was arguably the most important commodity in this class, and it has been argued that the Severn was the 'highway' of the iron trade in this period.[36] Undoubtedly, this merits more discussion than can be devoted here, suffice to say that much pig and bar iron was shipped upstream, whilst equally large amounts of ironware were shipped downstream from Bewdley to Bristol. As a result, a very similar number of voyages (153) carried metal wares from Gloucester. Some of these goods were undoubtedly transshipped at Bristol for centres throughout the region, although the high incidence of metal goods traded from the city owed perhaps more to the output of its copper, brass and lead industries and foreign imports, such as Swedish steel. However, the Bristol-Gloucester trade hides complex cross-regional associations involving diverse and interlinked patterns of metal production, use and working. Thus, the Cornish ports were heavily involved in the shipment of copper and tin; lead, copper, and litharge was beginning to be worked in the Swansea valley and the Vale of Neath; Chepstow shipped brass and latten ware from Redbrook as well as iron from Brockweir; and Newport and Caerleon handled much of the output of the Pontypool forges. These issues are covered more thoroughly in the discussion of individual ports.

Much the same situation is revealed in the movement of Textiles with Bristol and Gloucester forming the main commercial nodes. Gloucester, because of its diverse hinterland, exported a variety of fine and rough cloths and upholstery fabrics, as well as textile products such as yarn. Most notable were the large quantities of linen, woollen, mercery, drapery and haberdashery goods traded mainly in Shrewsbury boats which had originated in the north-west of England and north and mid-Wales. Gloucester also dealt extensively in a range of local generic cloths, particularly Kidderminster goods and stuffs and with increasingly less frequency Worcester broad cloths. Bristol's importance lay largely in its entrepot functions and in the distribution of overseas textiles, such as French canvas and German oznabriggs. Bridgwater and Minehead were the only other centres of note. Both traded those regional cloths - bays, dunsters, blues, serge, and penistones - which did not pass south through Totnes and Exeter, the principal finishing centres of the peninsula. Elsewhere, apart from the odd cargo of Welsh frieze, the trade in textiles was minimal and largely dominated by shipments from Bristol.

The extent and direction of trade in these classes of good are discussed more fully in the following section. However, the trade in Wood and Fishery products, though far less extensive, poses greater difficulties. Firstly, whilst the region contained both commercially exploitable forest - the Wyre, Dean, Exmoor and west Glamorgan for example - and areas of relative deficiency, the recorded trade in timber and bulk wood was surprisingly limited. Wood was only recorded significantly at Gloucester and Bristol. At Chepstow, through which most of the exports of wood-abundant Herefordshire and Dean must have passed, shipments are minimal.[37] However, the coastal imports of the south-west ports show large supplies of timber shipped from Chepstow. Similarly, the Milford and Carmarthen Port Books reveal wood and 'coal pit timber' traded from Burry and Llanelli, unrecorded in the records of the latter ports. The anomaly results from the use of letpasses which were recorded erratically, compounded in the case of Chepstow by dilatory record keeping of full cargoes. The low figures also suggest that locally-traded timber was largely regarded

as ballast and thus exempt from record; large quantities of timber were brought in coastways to the Somerset and north Devon ports for harbour improvement that went unrecorded in the Port Books.[38] Thus, it is perhaps only shipments through Gloucester that reveal even a fraction of the total amount of trade in wood and timberstuff. The relatively high proportion of the class recorded at Bristol mainly constitutes dutiable goods and overseas products such as deal boards, spars, masts, and plank imported from the Baltic, and dyewoods originating in the Americas.[39]

Secondly, given the region's close association with herring and pilchard fishing and with the Irish and Newfoundland fisheries, the level of Fishery goods recorded is low. Again, this reflects difference in Customs recording practice rather than levels of trade. As non-dutiable goods, fish did not have to progress under coquet and bond.[40] Thus, where fish formed the sole commodity traded, and did not appear in mixed consignments carrying goods subject to coquets, trade may appear seriously diminished.[41] Port Book assessments of the 'coquet-ports' of Mount's Bay, St. Ives and Padstow contrasts with contemporary evidence which stress the 'prodigious shoals' of herrings 'caught in great quantities' by south-western vessels.[42] Similarly, recent work by Scantlebury, Whetter, and Southward, Boalch and Maddock suggests that the fisheries were at their peak at this period.[43] However, the 'trends' in inshore fishing suggested by Whetter are based on a combination of data culled from sampled overseas and coastal Port Books and as such must be regarded with some suspicion.

The Port Book record of the trade in herrings is summarised in Table 3.8. For the Table, importing centres have been grouped according to head port, and all measures converted to the standard herring barrel.[44] The Table reveals that Ilfracombe, Minehead, Milford and to a lesser extent Bideford - the principal letpass-recording ports - provide over 90% of coastal exports.[45] Where fish were traded as part of larger coquet shipments, the record appears full. For example, at Bristol a secondary mostly transshipment centre, coastal re-exports consisted of a large number of very small consignments. This has the result of bolstering the profile of Bristol even though its mean shipment of herring was insignificant: Bristol traded an average

Table 3.8: Barrels of herrings traded from regional ports by destination, sample year.

From	*Destination*										
	Bristol	Severn	Som.	N.Devon	N.Corn.	S/W Wales	Glam-organ	Wye	Extra Regional	Not known	Total
Ilfracombe	1993	-	1530	284	608	-	-	-	1814	80	6309
Minehead	3230	320	402	410	-	101	0.45	10	-	-	4473
Milford	762	-	-	-	-	-	-	-	285	8	1054
Bideford	-	-	-	-	-	-	-	-	759	-	759
Bristol	-	410	-	-	-	-	30	35	2	-	477
Mounts Bay	-	-	-	-	-	-	-	-	250	-	250
Cardigan	-	-	-	-	-	-	-	-	-	225	225
Bridgwater	-	30	-	-	-	-	-	-	-	-	30
Swansea	-	2	-	-	-	-	-	-	-	21	23
Gloucester	9	-	-	-	-	-	-	-	-	-	9
Padstow	6	-	-	-	-	-	-	-	-	-	6
Tenby	4	-	-	-	-	-	-	-	-	-	4
Barnstaple	-	3	-	-	-	-	-	-	-	-	3
Total	6004	765	1932	694	608	101	30	45	3110	334	13621

Shipments of herrings traded from regional ports by destination, sample year.

From	*Destination*										
	Bristol	Severn	Som.	N.Devon	N.Corn.	S/W Wales	Glam-organ	Wye	Extra Regional	Not known	Total
Ilfracombe	16	-	6	3	3	-	-	-	8	1	37
Minehead	33	4	2	1	-	2	1	1	-	-	44
Milford	6	-	-	-	-	-	-	-	9	1	16
Bideford	-	-	-	-	-	-	-	-	5	-	5
Bristol	-	23	-	-	-	-	4	2	1	-	30
Mounts Bay	-	-	-	-	-	-	-	-	1	-	1
Cardigan	-	-	-	-	-	-	-	-	1	-	1
Bridgwater	-	1	-	-	-	-	-	-	-	-	1
Swansea	-	1	-	-	-	-	-	-	-	1	2
Gloucester	2	-	-	-	-	-	-	-	-	-	2
Padstow	1	-	-	-	-	-	-	-	-	-	1
Barnstaple	-	1	-	-	-	-	-	-	-	-	1
Tenby	1	-	-	-	-	-	-	-	-	-	1
Total	59	30	8	4	3	2	5	3	25	3	142

of only 15 barrels per voyage opposed to the 171 that cleared Ilfracombe or the 152 exported from Bideford. Bristol took in just under half of the recorded trade, whilst extra-regional ports, notably the south coast of Devon and Cornwall, accounted for nearly a quarter of the trade.[46]

These unexpectedly low figures may also have been caused by another factor. It has been suggested that the inshore fishery was geared to the overseas market and therefore did not impinge significantly upon the coastal or domestic trades.[47] Certainly, much of the local catch was exported,[48] or was consumed by local landsale.[49] Yet, despite the fact that Barnstaple, Bideford and Bristol were leading centres in exploiting the Newfoundland Banks, the recorded trade in cod and other fish was much more limited in comparison to that in herrings.[50] This may have been due to the fact that many Newfoundland cargoes were destined for the Iberian peninsula and the Straits, and direct imports were either re-exported again or were not traded coastally.[51] The correspondence of local merchants confirms the importance of the triangular trade that carried miscellaneous goods, ironware, salt and consumables to Newfoundland; dry and wet fish and associated fishery products to Iberia; and finally wine, spices and smaller quantities of wool, hops and salt back to the domestic market.[52] Thus, although some cod shipments were retained, very little was recorded in the coastal Port Books: Bideford, the regional centre, shipped a mere 52 barrels of cod and other fish in 4 consignments in 1699, whilst Bristol traded 282 barrels of 'fish' in 25 shipments in the same year.[53]

iii. The directional impetus: the coastal exports of the Bristol Channel ports.

The survey of wood and fishery goods has stressed that data gained from the Port Books are not wholly comprehensive and have to be used flexibly if credible results are to be gained. Bearing this in mind, this section will examine the coastal exports of the sixteen ports of the region where independent records were kept and where the data allows sensible comparative analysis to be made.[54] Data on coastal exports are

expressed according to the eight point classification system described above and by the geographical divisions outlined in Chapter 2. In addition, two further devices have been employed. Firstly, the results are presented in the form of a percentage of the total number of clearances bound for each port grouping. Secondly, this figure is expressed as a percentage of the number of voyages per port grouping in which each class of commodity was represented. As stressed above, the following tables indicate the representation of each class of commodity among regional coastal exports. They do not provide indications of the quantitative importance or the significance of individual goods or groups of goods within each class. However, wherever the discussion has demanded a closer examination of individual commodities, separate tables have been included.

In terms of the range and value of goods, Bristol occupied a central position in regional trade. Attention has already been drawn to the city's unchallenged dominance of the trade in overseas goods, at least within the limited spatial boundaries of the region. Similarly, many studies taking their cue from Minchinton's applied model of metropolitan influence have expressed how regional economies were increasingly dependent upon Bristol both in the acquisition of the necessaries and luxuries of foreign commerce and in selling their domestic surpluses. Such analyses have seen regional economies locked into a fundamentally one-sided cycle of trade defined by Bristol. The relation between Bristol and the Severn hinterland was central to this model. Bristol, by mediating most of the long-distance trade of the river, can be seen as acting as the commercial entrepot through which the goods of the economically diverse Severn hinterland - undoubtedly the most developed area within the city's ambit - were redistributed. From basic physical and commercial pre-dominance, many studies have stressed the step to thoroughgoing capital exploitation of the hinterland and its emergent industries as forming the basis to Bristol's success in the eighteenth century. However, such hypotheses have not always been consistently based upon sound commercial data.[55]

If Tables 3.5 and 3.6 are examined, it is apparent that by simple numeric comparison Bristol dominated in all the major productive, industrial, and 'value added' sectors, particularly in the area of foodstuffs and comestibles. Only in Extractive goods, largely the sort of unworked 'raw materials' generally given inferior status in models of centripetal metropolitan influence, and the more limited classes of Wood and Fisheries, was Bristol's centricity challenged. Yet, to understand fully the movement of goods coastally, and to determine the position of Bristol within the system of trade, a more precise critique of the metrocentric model must be attempted. In particular, we must examine whether the peripheries of the region were as linked to Bristol as fundamentally as the more proximate 'above-Holms' area.

Table 3.9 depicts the coastal exports from Bristol by class of commodity in 1699. The figures reveal a marked dependence upon the Severn trades with over a third of all shipments carrying each class destined for Gloucester.[56] The home ports of boats plying this trade are analysed in Table 3.10 following a simplified version of the geographical groupings utilised by Wakelin. For the purposes of this research, the Bristol Port Books have been used, because trade to the estuary ports, Newnham and Berkeley, was not consistently recorded at Gloucester prior to 1704. Where the shipment and home port has required confirmation the Gloucester record has been consulted.[57]

The Tables indicate the diversity of Bristol's trade and emphasise the complexity of its commercial role. Classic studies of metropolitan economies suggest that Bristol acted as the primate centre and focus of consumption, 'parasitic' almost upon its rural hinterland, sucking in agrarian surpluses, raw materials and the products of rural industry and dispensing high cost manufactured goods and luxuries, and cultural and economic services.[58] This may have inspired the polarisation of trade and the economic specialisation of both centre and hinterland. However, this relationship is somewhat blurred. In 1699, Bristol was redistributing the very agricultural staples normally associated with regional supply. For example, domestic, Irish and Spanish wool for the cloth industry of the south west and Midlands; corn

Table 3.9: Voyages clearing Bristol by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Severn	116	162	87	184	112	66	98	51	231
Somerset	22	48	14	48	47	8	36	32	50
N. Devon	22	24	12	24	22	0	22	10	25
N. Cornwall	6	15	5	15	15	0	8	7	15
Pemb/Carm	14	29	6	27	24	10	25	12	29
SWN + NTH	8	19	7	18	11	2	18	7	19
CRD	14	26	12	26	20	8	22	5	29
Wye	16	15	11	18	11	7	12	5	25
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	46	50	25	47	46	14	14	20	59
Unknown	7	6	5	6	5	1	4	1	9
	271	394	184	413	313	116	259	150	491

Percentage number of voyages clearing Bristol by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Severn	50	70	38	80	48	29	42	22	231
Somerset	44	96	28	96	94	16	72	64	50
N. Devon	88	96	48	96	88	0	88	40	25
N. Cornwall	40	100	33	100	100	0	53	47	15
Pemb/Carm	48	100	21	93	83	34	86	41	29
SWN + NTH	42	100	37	95	58	11	95	37	19
CRD	48	90	41	90	69	28	76	17	29
Wye	64	60	44	72	44	28	48	20	25
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	78	85	42	80	78	24	24	34	59
Unknown	78	67	56	67	56	11	44	11	9
									491

Voyages clearing Bristol by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Severn	43	41	47	45	36	57	38	34	231
Somerset	8	12	8	12	15	7	14	21	50
N. Devon	8	6	7	6	7	0	8	7	25
N. Cornwall	2	4	3	4	5	0	3	5	15
Pemb/Carm	5	7	3	7	8	9	10	8	29
SWN + NTH	3	5	4	4	4	2	7	5	19
CRD	5	7	7	6	6	7	8	3	29
Wye	6	4	6	4	4	6	5	3	25
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	17	13	14	11	15	12	5	13	59
Unknown	3	2	3	1	2	1	2	1	9
									491

Table 3.10: Voyages from Bristol to Severn ports by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	19	26	7	29	11	12	13	8	30
Gorge	1	1	6	2	2	0	0	2	9
Bridgnorth	5	5	5	5	2	2	3	1	13
Bewdley	21	29	17	33	34	20	17	8	42
Worcester	38	53	20	64	25	15	37	20	67
Evesham	4	6	11	8	5	3	4	2	11
Tewkesbury	9	3	11	14	9	6	10	2	22
Gloucester	14	19	7	20	16	3	8	7	25
Estuary	1	3	0	3	2	2	2	0	3
Other	2	2	2	1	2	2	1	0	3
Unknown	2	5	1	5	4	1	3	1	6
	116	152	87	184	112	66	98	51	231

Percentage number of voyages from Bristol to Severn ports by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	63	87	23	97	37	40	43	27	30
Gorge	11	11	67	22	22	0	0	22	9
Bridgnorth	38	38	38	38	15	15	23	8	13
Bewdley	50	69	40	79	81	48	40	19	42
Worcester	57	79	30	96	37	22	55	30	67
Evesham	36	55	100	73	45	27	36	18	11
Tewkesbury	41	14	50	64	41	27	45	9	22
Gloucester	56	76	28	80	64	12	32	28	25
Estuary	33	100	0	100	67	67	67	0	3
Other	67	67	67	33	67	67	33	0	3
Unknown	33	83	17	83	67	17	50	17	6
									231

Voyages from Bristol to Severn ports by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	16	17	8	16	10	18	13	16	30
Gorge	1	1	7	1	2	0	0	4	9
Bridgnorth	4	3	6	3	2	3	3	2	13
Bewdley	18	19	20	18	30	30	17	16	42
Worcester	33	35	23	35	22	23	38	39	67
Evesham	3	4	13	4	4	5	4	4	11
Tewkesbury	8	2	13	8	8	9	10	4	22
Gloucester	12	13	8	11	14	5	8	14	25
Estuary	1	2	0	2	2	3	2	0	3
Other	2	1	2	1	2	3	1	0	3
Unknown	2	3	1	3	4	2	3	2	6
	100	100	100	100	100	100	100	100	231

and grain crops; cheese; skins; hemp, flax, clover and garden seeds; and a variety of goods of overseas provenance were all regularly transported from Bristol. Much of this consisted of goods transshipped from regional ports, although a proportion probably came overland from Bristol's immediate rural environs.[59] Thus, of the 271 voyages carrying Agricultural goods, 43% were dispatched to Gloucester, and thence to the major urban markets and dispersal centres of Worcester, Bewdley, and Shrewsbury. The category represented over half the total number of shipments imported coastally by these river ports. Even shipments to Tewkesbury and Evesham, the ports through which much of the surpluses of Midland agriculture were exported coastwise, were not inconsiderable. Agricultural goods occupied a similarly important role in Bristol's trade with the wider region. In particular, north Devon, Chepstow and ports beyond the region took substantial quantities of such goods. The class was a central component of most cargoes traded to the south-coast ports and London: large consignments of cider, apples, and cheese and also beeswax, butter and grain, obtained from Cardiff and from the Midlands and Welsh borderlands via the Wye and the Severn, were traded in this direction.[60]

A similar relationship is revealed in the trade in Extractive goods. Apart from high quality coal deposits at Kingswood chase, Bristol had no direct access to mineral deposits or extensive quarries.[61] What coal was traded took the form of small 6 to 8 chalder shipments in returning Severn Gorge colliers and Evesham and Tewkesbury trows. This may have been the output of local collieries or, rather less plausibly, transshipped south Wales coal. Most of the other Extractive goods were transshipped domestic commodities such as pot clay, pipe clay, lead ore, stone, and quarried tile. For example, of the 253 tons of tobacco pipe clay imported from north Devon in 1699, Bristol re-shipped 17 tons mostly in the form of small consignments in mixed cargoes.[62] Similarly, whilst Bristol received some 581.25 tons of pot clay via Gloucester in 1699, principally for its glass, soap, sugar and metal industries,[63] it exported coastally 227 tons in 16 shipments in 1699, the bulk of which - 174 tons - was carried in 10 shipments to London.

However, Bristol's role in regional trade is best viewed through the classes of Crafts and Manufactures, Food and Drink, and Metal Goods. Manufactures included not only small quantities of petty indigenous manufacture and the products of small-scale semi-urban crafts such as joinery wares, but also the types of product only available through Bristol: luxury goods and overseas commodities like looking glasses; glass vials; oil; and tobacco pipes (although the trade in pipes was linked closely to other centres of production notably Broseley and north Devon and the overseas market).[64] Table 3.9 reveals that the class of commodity was also the most widely traded of the eight categories. Virtually all shipments to Somerset, Devon, Cornwall, south-west Wales, and Glamorganshire contained an element of Bristol-crafted or assembled Manufactured items. In addition, the class was well represented in extra-regional voyages with consistently high numbers of shipments carrying items to London and Liverpool. In contrast, shipments to the Severn ports reveal a different picture. Demand was consistently high at Shrewsbury, Worcester, Gloucester and Bewdley, whereas in Tewkesbury, Upton, the Severn Gorge and Bridgnorth, ports serving less developed urban hinterlands, trade was less extensive, even though in the case of the Gorge ports and Bridgnorth, the number of coal boats represented in the Tables has diminished the quantitative importance of the class.

Glass and soap were central to Bristol's manufacturing base. As Minchinton emphasised, Bristol's glass industry was a major component in the gearing of the pre-industrial regional economy.[65] However, there was a distinct specialisation in the goods traded coastwise. From the evidence of the Port Books, Bristol industry produced largely glasswares, especially bottles, glasses and vials. For example, over 15,300 dozen glass bottles alone were shipped from Bristol in 1699. Over 30% of these were destined for the Severn ports, with boats of Worcester and Gloucester the main carriers. A further 3,200 dozen glass bottles were shipped to Somerset and north Devon. However, most of Bristol's coastal exports of glass bottles in 1699 went to extra- regional centres. These accounted for more than 6,300 dozen (41% of the total shipped), in which trade Topsham, Exeter's outlier, Plymouth and Newhaven featured

prominently.[66] Some of the output of Bristol's glassworks must also have been traded overland and a small proportion probably passed under letpass thus avoiding Customs record at Bristol.[67]

Broad and window glass, however, seems to have been the province of the Stourbridge industry which traded predominantly through Bewdley.[68] This may reflect the dominance of Bristol in the glasswares market in the south-west as by the nineteenth century Stourbridge was generally recognised for its decorative glasswares.[69] However, it is particularly difficult to measure glass output accurately from the coastal Port Books owing to the diversity of measures used and the confusion of commodity descriptions - glass was often carried with general items of glassware, drinking glass and earthenware.[70] None the less, the trade through Gloucester was substantial and largely one-way. In terms of voyages, 51 shipments passed through Gloucester in 1699, 45 being in Bewdley boats of which 36 carried glass to Bristol. A further six voyages in boats of other home ports traded glass to Bristol. In contrast, Bristol's exports of glass coastally were more thinly spread. Of the 52 voyages clearing the port, only one was bound for Gloucester, and that in a Newnham boat.[71] This may represent an early example of the nascent 'cartellization' of regional glass marketing suggested by Court. Producers seem to have specialised in different areas carving up the supply of the hinterland, although such variables as price and transportation costs must be taken into consideration before such a theory could be generally applied.[72]

Coastal exports of glass were tied to imports of raw material from the hinterland. Large quantities of soap ashes and kelp were brought in from the Somerset ports: Bridgwater exported 300 ton of soapers' ashes to Bristol in 1699 and Minehead 57.25 tons in 1699-1700.[73] This was paralleled by growing imports from overseas of pearl ash,[74] as well as pot clay brought from Bewdley and sand from regional and long-distance coastal trade.[75] Isle of Wight sand was particularly desirable for Bristol glassmakers, but as this was generally carried as ballast it was not generally recorded in the Port Books.

Soap was also an important manufactured good centred upon Bristol with soapmaking being a long established industry protected by incorporation and borough legislation.[76] In addition to domestic supplies, Bristol imported some soap from overseas, especially Spain, which was then fed into the coastal trade. Castile soap, a quality soap made from double-boiled olive oil, was a frequent overseas import much copied by domestic producers because of its higher retail price.[77] Table 3.11 provides details of coastal shipments of soap recorded clearing Bristol in 1699. All measures have been reduced to the standard hundredweight and the few ambiguous combinations of the commodity with other goods have been excluded.[78]

Table 3.11: Exports of soap (in cwt) from Bristol, 1699.

Port	*Quantity*	*Shipments*	*Mean*	*Total Shipments*	*% with soap*
Severn	3393	62	54.73	231	27
Somerset	170	25	6.80	50	50
Devon	58	12	4.83	27	44
Cornwall	24	4	6.00	15	27
Pemb/Carm	640	23	27.83	29	79
Swansea/Neath	229	13	17.62	19	68
Cardiff	215	20	10.75	29	69
Wye	156	11	14.18	23	48
Extra-Regional	130	5	26.00	59	8
Total	5015	176	28.49		

The Table reveals Bristol's heavy involvement in Severn markets: over two-thirds of the soap recorded in the Port Books was moved to ports under the superintendence of Gloucester. Of this Shrewsbury took over three-quarters. However, the Severn trade amounted to little more than a third of all shipments. For much of the region, the trade was characterised by regular, yet small consignments, indicative of low but consistent demand,[79] and the competing influence of other centres. Soap, imported directly from overseas, was an occasionally important cargo at both Bideford and Bridgwater throughout the period.[80] Shipments from Bristol

carrying metal producer goods were somewhat less focused upon the Severn, although in terms of quantity, the reciprocal link between Bristol and Gloucester still formed the principal axis of regional trade. As Johnson and Hammersley have indicated the integration of the various capacities of the iron industry in particular ensured that trade between centres was both substantial and diverse.[81] However, owing to the prevalence of multiple commodity shipments and the confusion of pig iron with miscellaneous shipments of wrought iron and iron and brass wares, Port Book data do not lend themselves to a quantitative study of the iron trade. This is to be lamented as studies of regional growth would benefit from evaluating how much iron was imported up-Severn, from what regions this was derived, and whether overseas iron from Sweden or Spain was being traded extensively. However, counting the number of voyages carrying iron in some form gives a useful, if clumsy, index of trade. In 1699, 40% of all voyages clearing Gloucester carried iron, almost wholly to Bristol, whilst only 28% of inwards shipments carried the commodity. The latter trade was dominated by Bristol, although large quantities of pig iron came in from Chepstow: over two-thirds of all Chepstow shipments to Gloucester carried iron.

Similarly, it is clear that Bristol maintained an important entrepot trade in iron and ironwares with the wider region. Shipments with iron accounted for 46% of voyages departing Bristol in 1699. However, if the trade with Gloucester is discounted, 68% of shipments from Bristol to the lower Bristol Channel ports and beyond contained iron. Much of this was likely to have been derived from the west Midland hardware areas and the complex of forges situated in the hinterland of the upper Severn, although in this case Port Book evidence is lacking. In addition, significant amounts of copper and, from 1701, brass were exported throughout the region. However, the strength of local production in the Wye valley - particularly Coster's works at Redbrook - may account for the low figure of metal goods traded to Chepstow.[82]

As in the case of iron a detailed study of most metal goods using Port Book evidence is hampered by the confusion of terms and ambiguous descriptions employed

by Customs clerks.[83] However, the trade in lead and lead shot from Bristol is more amenable to summary and its analysis serves in some ways as a diagnostic study of the wider trading patterns of the class of commodity. Although Neath and, to a much lesser extent, north Devon and Cornwall were beginning to produce some lead, Bristol was the only major producer of lead, shot and litharge (the oxide of lead) in the region. It drew it supplies of raw lead and lead ore mainly from Cardiff, Cornwall, Chester, Montgomeryshire and west Wales. By 1700 very little came from the once rich mines of Mendip.[84] Whilst Bristol was not a major shipper of lead, compared to Hull and Chester,[85] its shot industry was destined to become increasingly important to the port in the eighteenth century. The amount of lead and lead shot shipped coastally between 1695 and 1701 is presented in Table 3.12.[86] The figures reveal distinctive patterns of trade. Firstly, shipments were small at around a ton per voyage, and although the Severn hinterland remained the single most important centre of consumption within the region, trade was not wholly defined by the axis with Gloucester. In particular, by 1698 and 1699, the amount shipped to Severn ports was far outstripped by that traded to ports beyond the Bristol Channel. In these years, extra- regional ports accounted for 40% and 46% respectively of lead and lead shot traded coastally. The most important centres in this trade were Exeter and Topsham, London, and a scattering of south coast ports.

The results seem to indicate that the long-distance coastal trade in lead and shot was seriously affected by war and privateering. It is only in the peace time 'window' between 1698 and 1701 that centres outside the region were major importers of Bristol lead. In addition, the peaking of trade, although not the number of shipments, at Gloucester in 1695, may also be related to the effects of the Anglo-French war. In this year, Gloucester boats were much more active than those of Worcester or the 'industrial' port Bewdley in carrying lead and shot, despite the fact that Gloucester itself was unlikely to have been a major consumer. Of course, transshipment to up-river craft could have taken place at Gloucester, although this would be an irregular practice. Alternatively, the extra quantities of lead and shot may

Table 3.12: Lead and shot (in cwt) exported coastally from Bristol, 1695-1701.

		Severn	Somerset	N.Devon	.Cornwall	Pemb/ Carm	Swansea/ Neath	Cardiff	Wye	Extra Regional	Unknown	Total
1695												
	qt	1570	701	576	282	195	61	169	30	420	-	4004
	ship	60	26	16	14	20	7	14	8	4	-	169
	mean	26	27	36	20	10	9	12	4	105	-	24
1696												
	qt	986	251	920	260	43	20	78	30	80	-	2667
	ship	52	19	10	11	15	5	12	5	3	-	132
	mean	19	13	92	24	3	5	6	6	27	-	20
1698												
	qt	1063	581	309	228	152	88	30	309	1899	40	4699
	ship	53	18	17	13	19	9	7	12	21	1	170
	mean	20	32	18	18	8	10	4	26	90	40	28
1699												
	qt	1103	225	435	146	79	16	15	128	1840	10	3997
	ship.	59	13	18	10	11	7	4	7	20	1	150
	mean	19	17	24	15	7	2	4	18	92	10	27
1701												
	qt	946	621	412	174	217	5	31	143	779	-	3327
	ship	39	20	13	9	11	4	7	14	16	-	133
	mean	24	31	32	19	20	1	4	10	49	-	25

have been transported to the south and east via Lechlade, the river port for the upper Thames.[87] Through such means Bristol lead may have made its way to the south-east but avoided privateers in the Channel. Similarly, the large quantity of lead and shot shipped in a much smaller number of voyages to Bideford, Barnstaple and Ilfracombe in 1696 may be explained by the curtailing of long-distance routes to south Cornwall and Devon.

Foodstuffs and drink also occupied a central position in Bristol's coastal trade: at no port grouping did less than 70% of shipments from Bristol include the class, and of the Severn ports, only the economically restricted markets of the Gorge ports were seriously underrepresented.[88] Undoubtedly, trade was grounded on traditional Bristol staples predominantly Spanish, Portuguese, and Canary wine and fortified wines,[89] and more recent goods such as domestic spirits. Bristol also had a share in such diverse activities as the distribution of beer and of the modish Hotwell and Bath spa waters.[90] Moreover, the spin-offs of transoceanic trade had by the later seventeenth century assumed great commercial significance. Bristol was one of most important national centres for the marketing of sugar and molasses: sugar boiling flourished on the back of the West Indies trade,[91] as did the rather later trade in rum.[92] In the coastal Port Books, the output of Bristol's many refineries tended to be subsumed under the generic customs term of grocery. However, substantial quantities of sugar and molasses were listed separately, particularly when dispatched to ports outside the immediate hinterland. Thus, in 1699, 157 tons, or some 95% of sugar and molasses recorded, were dispatched to London, Liverpool, Topsham, Plymouth, Southampton, and Newhaven.[93]

However, tobacco was the principal item of trade in this class of goods. Throughout the period, it was represented in around two-thirds of all shipments clearing the port coastways. The significance of the Bristol market and its links with the plantations in terms of mediating and controlling the levels of internal trade was central in maintaining the port's focal position in the trade. This has been discussed extensively by MacInnes, Wakelin and Morgan, and the importance of the commodity

as 'the first of the new mass consumed groceries' has been emphasised by Shammas and Goodman.[94] Table 3.13 contextualises Shammas' arguments concerning the availability of a 'pipeful a day' for 25% of the adult population - her index of mass consumption - by depicting the amount of tobacco traded coastally within the region. It must also be remembered that much tobacco circumvented the Customs and may have been traded coastally. Even though it was unlikely that the coastal Port Books discouraged merchants from having goods recorded, if tobacco had been imported illegally, or, as was often the case, surreptitiously condemned as damaged goods, as many a Customs investigation supposed was happening at Bristol,[95] it was unlikely to re-enter the Customs network under an official coastal coquet.[96] Yet, even if we allow for Nash's correctives, the central importance of Bristol is evident: 97% of all tobacco exported coastally from regional ports was shipped from Bristol. The axis with the Severn was vital - over 60% of recorded tobacco exports that cleared coastally from the port in 1699 passed to or through Gloucester.[97] Worcester, with its prosperous local hinterland and large urban market was quantitatively and proportionally dominant. Between 1695 and 1701, Worcester never took less than a third of all tobacco shipped via Gloucester, and in 1701 accounted for over two-thirds of tobacco by weight passing through the head port.[98] None the less, the Somerset ports, Carmarthen, Milford, Cardiff and its creeks,[99] and Chepstow were importing considerable quantities of tobacco from Bristol. Extra-regional trade was also a significant feature in Bristol's coastal exports of tobacco: Exeter alone accounted for 53,094 lbs. Unexpectedly, centres more usually associated with the overseas importation of tobacco - London, Liverpool and Whitehaven - received sizeable cargoes from Bristol,[100] although this may have represented the levelling out of trade. As with many transoceanic cargoes, tobacco was shipped to the most convenient domestic port and then redistributed coastally.[101] This may explain the 7,838 lbs Bristol imported coastally from regional centres, although it is more likely to represent damaged or unmerchantable tobacco returned to Bristol.[102] Only Bideford and Barnstaple among regional ports were net exporters of tobacco coastwise. As

Table 3.13: Tobacco (in lbs) exported coastally from regional ports, sample year.

	Severn	Bristol	Som.	Devon	Cornwall	Pemb Carm	Swansea Neath	Cardiff	Wye	Extra Regional	Total
Bristol	962646	-	268621	32544	8173	64778	52091	77067	61391	180445	1707756
Bridgwater	20000	2350	-	-	-	-	674	-	-	4320	27344
Bideford	-	3434	-	3150	3899	-	2244	-	-	1717	14444
Barnstaple	-	1574	9900	-	-	248	612	-	-	-	12334
Minehead	-	30	-	261	-	772	1388	210	-	-	2661
Tenby	-	-	740	-	-	-	-	-	-	-	740
Milford	-	450	-	-	-	-	-	-	-	44	494
Liverpool	-	-	11000	400	1805	7200	-	-	-	259494	279899
Total	982646	7838	290261	36355	13877	72998	57009	77277	61391	446020	2045672

Shipments of tobacco from regional ports, sample year.

	Severn	Bristol	Som.	Devon	Cornwall	Pemb Carm	Swansea Neath	Cardiff	Wye	Extra Regional	Total
Bristol	145	-	45	14	7	25	16	26	17	24	319
Bridgwater	1	5	-	-	-	-	2	-	-	1	9
Bideford	-	2	-	1	2	-	6	-	-	1	12
Barnstaple	-	2	2	-	-	1	2	-	-	-	7
Minehead	-	1	-	1	-	1	1	1	-	-	5
Tenby	-	-	1	-	-	-	-	-	-	-	1
Milford	-	1	-	-	-	-	-	-	-	1	2
Liverpool	-	-	1	1	1	3	-	-	-	46	52
Total	146	11	49	17	10	30	27	27	17	73	407

important overseas ports both ports distributed supplies to Devon and Cornwall.[103]

Entrepot functions dominated the trade in the categories of Textiles, Fisheries and Wood. Bristol did not possess a strong cloth-manufacturing base, although Somerset and Stroudwater were important cloth areas nearby.[104] It was not a major centre for fishing - the lack of merchantable fish regularly troubled the Common Council[105] - nor was it overly endowed with exploitable woodland. None the less, trade was reasonably well represented through the dispatch of overseas and regionally produced goods. Textiles, for example, included linen and woollen goods shipped to Bristol through Shrewsbury, Bewdley and Worcester and south-western serges sent up-Severn. These trades were supplemented by shipments of imported goods - silkwares, East India textiles, Irish cloth and bay yarn. As Table 3.8 has demonstrated, Bristol tended to occupy a similar role in the trade in fish, whilst maintaining a firm hold over the more profitable, overseas products. For example, in 1699 Bristol received 189 hogsheads of train oil in seven shipments from Bideford. In the same year 62 voyages carrying 283 hogsheads were dispatched coastally, three-quarters of which were bound for the Severn ports with Gloucester boats being the principal shippers.[106] Much of this was diverted to the Cotswold cloth industry, as train was widely used in the initial processing of raw fleeces in some of the cheaper cloths.[107]

Again, Wood and Timberstuff was mostly represented by transshipped Severn goods such as laths, jumps, canes and hoops and overseas timber, principally Scandinavian softwoods such as deals and deal boards. For example, in 1699 the port shipped out 7,533 deals and deal boards in 64 voyages. 4,850 deals were taken by Gloucester, the rest distributed in smaller consignments to other ports in the region. However, the figures for 1699 may overstress the importance of Severn markets to the coastal trade in deals from Bristol. Of the 3,368 deals traded coastally in 1695, only half went via Gloucester. In 1696, 1698 and 1701 when 970, 13,723, and 9,479 deals respectively were traded, quantities dispatched to Gloucester represented only 31%, 44% and 57% of trade respectively. On such occasions, the Somerset ports took a

relatively larger share of the total traded, peaking in 1698 when just under 34% of deals traded (4,687 deals and deal boards) were taken by Bridgwater, Minehead and Watchet.[108]

Whilst the coastal exports of Bristol were in large part contingent upon the importance of the port in mediating overseas trade, those of Gloucester were reliant wholly upon the domestic output of the Severn hinterland. This has been analysed in a more comprehensive fashion elsewhere than can be discussed here.[109] However, Tables 3.14 and 3.15 provide a comparative summary of the main areas of commerce clearing Gloucester and the up-river ports respectively in 1699. The Tables indicate the singular importance of Bristol to all sectors of trade: in all classes of commodity bar Extractive goods over 86% of recorded clearances were bound for Bristol. In textiles, Gloucester traded Welsh cloth and north-west fabrics from Shrewsbury;[110] largely Kidderminster produced mixed cloth via Bewdley, and indigenous broad cloth and some transshipped cloth from the north west from Worcester.[111] In this class of commodity only 7% of shipments were traded to ports other than Bristol.[112] Of these other destinations, the only centres of note were the Somerset ports of Bridgwater and Minehead. Here Droitwich salt traded in Worcester, Bewdley and Upton boats and destined for the inshore and overseas fisheries formed the major impetus to trade: cloth was very much a commercial filler.[113]

Secondly, Worcester and Bewdley are shown to be the central foci of supply. In 1699 Worcester was the most active town on the river involved in the long-distance trade. It had important connections with the arable vales of Felden Worcestershire and Warwickshire, a virtual monopoly of the regional trade in hops, a rapidly expanding trade in Droitwich salt, and a proximate rural and urban manufacturing base.[114] The diversity of the town's trade is apparent in the proportional share of each class of commodity. Only in the case of fishery goods, hardly a commercial mainstay of inland centres, did any class feature in less than 55% of voyages. Bewdley, on the other hand, acted as the transport node for Birmingham and Black Country. Bewdley

Table 3.14: Voyages clearing Gloucester by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	209	228	154	218	138	7	179	184	281
Somerset	10	20	21	11	12	1	12	7	26
N. Devon	1	3	6	1	0	o	1	2	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	2	2	1	1	1	0	1	2	2
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	5	5	3	0	0	0	4	5
Wye	4	5	10	1	2	0	0	0	10
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	1	1	2	2	0	0	0	2	2
	227	264	199	237	153	8	193	201	332

Percentage number of voyages clearing Gloucester by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	74	81	55	78	49	2	64	65	281
Somerset	38	77	81	42	46	4	46	27	26
N. Devon	17	50	100	17	0	0	17	33	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	100	100	50	50	50	0	50	100	2
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	100	100	60	0	0	0	80	5
Wye	40	50	100	10	20	0	0	0	10
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	100	100	100	100	0	0	0	100	2
									332

Voyages clearing Gloucester by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	92	86	77	92	90	88	93	92	281
Somerset	4	8	11	5	8	13	6	3	26
N. Devon	0	1	3	0	0	0	1	1	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	1	1	1	0	1	0	1	1	2
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	2	3	1	0	0	0	2	5
Wye	2	2	5	0	1	0	0	0	10
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	0	0	1	1	0	0	0	1	2
	100	100	100	100	100	100	100	100	332

Table 3.15: Voyages from Severn ports by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	24	25	7	17	4	1	26	12	27
Gorge	2	4	3	3	1	0	1	5	7
Bridgnorth	12	14	16	8	4	0	4	9	22
Bewdley	41	71	60	36	77	2	59	59	84
Worcester	78	68	76	76	46	2	62	58	84
Evesham	11	10	1	14	0	0	5	7	14
Tewkesbury	26	40	19	41	9	0	7	25	49
Gloucester	32	31	16	42	11	3	28	25	43
Wye	0	0	1	0	0	0	0	0	1
Other	1	1	0	0	1	0	1	1	1
	227	264	199	237	153	8	193	201	332

Percentage number of voyages from Severn ports by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	89	93	26	63	15	4	96	44	27
Gorge	29	57	43	43	14	0	14	71	7
Bridgnorth	55	64	73	36	18	0	18	36	22
Bewdley	49	85	71	43	92	2	70	70	84
Worcester	93	81	90	90	55	2	74	69	84
Evesham	79	71	7	100	0	0	29	50	14
Tewkesbury	53	82	39	84	18	0	14	51	49
Gloucester	74	72	37	98	26	7	65	58	43
Wye	0	0	100	0	0	0	0	0	1
Other	100	100	0	0	100	0	100	100	1
									332

Voyages from Severn ports by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Salop	11	9	4	7	3	13	13	6	27
Gorge	1	2	2	1	1	0	1	2	7
Bridgnorth	5	5	8	3	3	0	2	4	22
Bewdley	18	27	30	15	50	25	31	29	84
Worcester	34	26	38	32	30	25	32	29	84
Evesham	5	4	1	6	0	0	3	3	14
Tewkesbury	11	15	10	17	6	0	4	12	49
Gloucester	14	12	8	18	7	38	15	12	43
Wye	0	0	1	0	0	0	0	0	1
Other	0	0	0	0	1	0	1	0	1
	100	100	100	100	100	100	100	100	332

boats were the principal metal carriers on the river, freighting large quantities of iron, ironwares, nails, and steel, and accounting for over half the metal shipments recorded at Gloucester. Similarly, Manufactures such as scythes, lanthorns and leather; extractive goods, mostly salt; Kidderminster textiles; and Wood and wood ware from the Wyre forest were important sectors of trade represented on Bewdley boats.

Worcester and Bewdley vessels thus shipped the majority of all classes of good with the exception of Food and drink. Here, the malting centres of Tewkesbury and Gloucester were more important with 84% and 98% of voyages respectively carrying the class of commodity. Malt was also carried alongside agricultural surpluses and the products of rural industry in all 15 voyages undertaken by Evesham boats. However, trade was more diverse at the other river ports: Shrewsbury pursued a healthy trade in Agricultural goods, Crafts, and Textiles; and the Gorge ports and Bridgnorth, although dominated by coal shipments, traded in a wide range of commodities except metals and Textiles. This pattern was also apparent at Tewkesbury and Upton, although both ports were less concerned with the Bristol trade than with the tramping of salt to Somerset and south Wales. At Gloucester all categories of good were well emphasised; a pattern which resulted from the transshipment of cargoes from up-river ports rather than the diversity of local produce.

A similar qualitative if not quantitative diversity of goods is apparent in the trade of Bridgwater and Minehead, described in Tables 3.16 and 3.17. Coastal exports were dominated by Agricultural goods traded to Bristol, which took 36% and 59% of shipments respectively, and also to extra-regional ports, principally Liverpool. Shipments to Liverpool represented 21% of Agricultural goods clearing Bridgwater, mostly in the form of small return cargoes carried under letpasses. Bridgwater, Minehead and, especially its creek, Watchet were also ideally situated to exploit the output of the productive, 'highly professional' mixed arable and market garden areas of Taunton Deane.[115] Cereals, fodder crops and garden produce - wheat, barley, large quantities of peas and cabbages derived from the Vale - formed the main coastal exports of the ports. In the sample year, 128 shipments, representing 79% and 42% of

Table 3.16: Voyages clearing Bridgwater by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	30	24	7	19	9	3	6	6	34
Severn	15	9	0	8	5	6	8	0	15
N.Somerset	3	1	0	1	0	0	1	1	4
N. Devon	4	1	2	2	0	0	0	1	5
N. Cornwall	0	0	0	1	0	0	0	0	1
Pemb/Carm	2	0	0	0	0	0	0	0	2
SWN + NTH	8	1	0	2	1	0	1	0	10
CRD	-	-	-	-	-	-	-	-	-
Wye	4	0	0	0	1	0	1	0	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	18	3	2	12	1	1	2	1	20
Unknown	-	-	-	-	-	-	-	-	-
	84	39	11	45	17	10	19	9	95

Percentage number of voyages clearing Bridgwater by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	88	71	21	56	26	9	18	18	34
Severn	100	60	0	53	33	40	53	0	15
N.Somerset	75	25	0	25	0	0	25	25	4
N. Devon	100	20	40	40	0	0	0	20	5
N. Cornwall	0	0	0	100	0	0	0	0	1
Pemb/Carm	100	0	0	0	0	0	0	0	2
SWN + NTH	80	10	0	20	10	0	10	0	10
CRD	-	-	-	-	-	-	-	-	-
Wye	100	0	0	0	25	0	25	0	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	90	15	10	60	5	5	10	5	20
Unknown	-	-	-	-	-	-	-	-	-
									95

Voyages clearing Bridgwater by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	36	62	64	42	53	30	32	67	34
Severn	18	23	0	18	29	60	42	0	15
N.Somerset	4	3	0	2	0	0	5	11	4
N. Devon	5	3	18	4	0	0	0	11	5
N. Cornwall	0	0	0	2	0	0	0	0	1
Pemb/Carm	2	0	0	0	0	0	0	0	2
SWN + NTH	10	3	0	4	6	0	5	0	10
CRD	-	-	-	-	-	-	-	-	-
Wye	5	0	0	0	6	0	5	0	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	21	8	18	27	6	10	11	11	20
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	95

Table 3.17: Voyages clearing Minehead by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	35	21	5	19	6	35	25	1	64
Severn	8	0	0	2	0	4	1	0	9
Somerset	1	0	1	2	0	2	2	0	6
N. Devon	1	2	2	2	0	1	0	0	7
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	3	0	1	1	0	2	1	0	6
SWN + NTH	8	4	3	3	2	1	9	1	20
CRD	0	1	0	1	0	0	3	0	4
Wye	1	0	3	0	0	1	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	1	1	0	3	0	0	2	0	7
Unknown	1	0	0	1	0	0	0	0	1
	59	29	15	34	8	46	43	2	127

Percentage number of voyages clearing Minehead by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	55	33	8	30	9	55	39	2	64
Severn	89	0	0	22	0	44	11	0	9
Somerset	17	0	17	33	0	33	33	0	6
N. Devon	14	29	29	29	0	14	0	0	7
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	50	0	17	17	0	33	17	0	6
SWN + NTH	40	20	15	15	10	5	45	5	20
CRD	0	25	0	25	0	0	75	0	4
Wye	33	0	100	0	0	33	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	14	14	0	43	0	0	29	0	7
Unknown	100	0	0	100	0	0	0	0	1
									127

Voyages clearing Minehead by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	59	72	33	56	75	76	58	50	64
Severn	14	0	0	6	0	9	2	0	9
Somerset	2	0	7	6	0	4	5	0	6
N. Devon	2	7	13	6	0	2	0	0	7
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	5	0	7	3	0	4	2	0	6
SWN + NTH	14	14	20	9	25	2	21	50	20
CRD	0	3	0	3	0	0	7	0	4
Wye	2	0	20	0	0	2	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	2	3	0	9	0	0	5	0	7
Unknown	2	0	0	3	0	0	0	0	1
	100	100	100	100	100	100	100	100	127

all voyages clearing Bridgwater and Minehead respectively, carried in total 52,781 bushels of grain and other crops dispatched largely to Bristol, Liverpool and Gloucester.[116] In the same year 8,000 cabbage plants were shipped to Milford from Bridgwater alone.[117] In addition, Bridgwater was the main centre in the region for the shipping of garden seeds and nitrogen-fixing sainfoin and clover seed that had originated in north Somerset where 'advanced' agrarian practices had taken hold.[118] Similarly, flax and hemp, important for ropemaking, the fishing industry, and also the regional linen industries formed a major component in both ports' exports.

What is more, the Somerset harbours were equally well placed for shipping the produce of the Somerset Levels, and the less well developed upland pastures of the Brendon Hills and Exmoor.[119] These were important areas for the rearing and fattening of cattle and pigs and the grazing of sheep. Indigenous beasts were supplemented by a considerable trade in Welsh cattle and swine brought coastwise, prior to being sold at local markets and fairs or driven westwards to Bristol and the Home Counties.[120] The prevalence of the pastoral economy and the limited importance of dairying in north Somerset is demonstrated in the region's coastal exports: Bridgwater exported only small quantities of butter and cheese - 197 cwt of cheese was shipped coastways in 1699, 60% of which went to Bristol. This compares to the 249 tons of cheese traded from Gloucester in 1699 and the 7,807 tons Liverpool dispatched, mostly to London.[121] Hides, skins and wool, sheared locally and imported from the north-west and Ireland, were also consistent features of the outwards trade.

In other sectors commercial activity was sporadic. The Somerset ports shipped small amounts of Food and Drink, mostly in the form of malt to Bristol, Gloucester and extra-regional ports; and small consignments of tobacco and wine, either imported directly, or transshipped from Bristol and tramped around the coast. Similarly, rural crafts figured in local cargoes. Bridgwater supplied such goods as tanned wares, turned wood products, knitted stockings,[122] and soapers' and wood ashes as back-cargo for its principal trades with Bristol and the Severn ports: 85% of all shipments

with Manufactures were traded to these centres. In the case of Minehead, 72% of shipments carrying Crafts and Manufactures were directed to Bristol. In Fisheries and Textiles, however, Minehead was the more important centre with over a third of all voyages carrying each class. As Minehead and its satellites were directly accessible to the open sea, they took more of the passing and incidental trade than estuarine Bridgwater, dominating the shipment, if not the amount, of white and red herring traded regionally.[123] Similarly, textiles, especially serge, other domestic cloths and also prize goods like canvas, appear to have been traded more through Minehead than Bridgwater. Evidence suggests that much of the serge originated in the south of Devon and was traded overland by packhorse and wagon.[124] The total trade in Textiles was also less closely associated with Bristol: 21% of shipments carrying textiles were destined for Swansea and Neath largely as return cargoes in coal boats. However, the Tables reveal the Somerset ports to be insignificant in the coastal export of Extractive goods, Metals, and Wood. What was traded tended to comprise transshipped, reprocessed or prize salt; old iron, shruff brass and pewter shipped back to Bristol; and the occasional shipment of elm, walnut, deals, spars and poles.[125]

Tables 3.18, 3.19 and 3.20 record the commodities traded from the north Devon ports. These reveal a distinct separation between the exposed and isolated haven of Ilfracombe, and the economically buoyant, relatively populous, corporate towns of Barnstaple and Bideford, situated on the sheltered, deep-water estuary of the Taw-Torridge estuary with access to a hinterland of established inland markets, rural crafts, and an increasingly progressive and productive agrarian regime. This area was dominated by livestock rearing and sheep grazing but also supported a growing acreage devoted to commercial as opposed to subsistence arable.[126] As Table 3.19 reveals, Agricultural goods occupied just under a quarter of Bideford's exports in 1699, half of which were to extra-regional ports, principally Liverpool. Of the 11,916 bushels of grain, mostly oats, that cleared the port in 1699, over four-fifths were destined for Liverpool. In comparison, Barnstaple dealt exclusively with shipping domestic and Irish hides, skins and wool to Bristol and Gloucester. By the end of the

Table 3.18: Voyages clearing Barnstaple by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	5	4	17	6	2	3	6	1	17
Severn	1	3	2	0	0	1	0	0	4
Somerset	0	1	1	2	0	0	0	0	3
N. Devon	0	2	3	1	0	0	0	3	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	4	1	1	0	1	0	1	6
SWN + NTH	0	4	0	3	1	0	2	0	9
CRD	0	1	0	0	0	1	0	0	1
Wye	0	1	1	0	0	0	0	0	2
Cross-Reg	0	1	1	0	0	0	0	0	1
Extra-Reg	0	3	0	0	0	1	1	0	5
Unknown	-	-	-	-	-	-	-	-	-
	6	24	26	13	3	7	9	5	54

Percentage number of voyages clearing Barnstaple by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	29	24	100	35	12	18	35	6	17
Severn	25	75	50	0	0	25	0	0	4
Somerset	0	33	33	67	0	0	0	0	3
N. Devon	0	33	50	17	0	0	0	50	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	67	17	17	0	17	0	17	6
SWN + NTH	0	44	0	33	11	0	22	0	9
CRD	0	100	0	0	0	100	0	0	1
Wye	0	50	50	0	0	0	0	0	2
Cross-Reg	0	50	50	0	0	0	0	0	1
Extra-Reg	0	60	0	0	0	20	20	0	5
Unknown	-	-	-	-	-	-	-	-	-
									54

Voyages clearing Barnstaple by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	83	17	65	46	67	43	67	20	17
Severn	17	13	8	0	0	14	0	0	4
Somerset	0	4	4	15	0	0	0	0	3
N. Devon	0	8	12	8	0	0	0	60	6
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	17	4	8	0	14	0	20	6
SWN + NTH	0	17	0	23	33	0	22	0	9
CRD	0	4	0	0	0	14	0	0	1
Wye	0	4	4	0	0	0	0	0	2
Cross-Reg	0	4	4	0	0	0	0	0	1
Extra-Reg	0	13	0	0	0	14	11	0	5
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	54

Table 3.19: Voyages clearing Bideford by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	6	10	14	5	1	9	3	0	15
Severn	-	-	-	-	-	-	-	-	-
Somerset	1	4	2	0	0	1	0	1	6
N. Devon	0	0	1	1	1	0	0	0	2
N. Cornwall	0	1	1	2	0	0	0	1	2
Pemb/Carm	1	3	0	2	2	1	2	0	8
SWN + NTH	0	11	1	5	2	1	2	0	16
CRD	0	1	0	0	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	8	3	4	1	0	6	0	0	19
Unknown	0	2	1	0	0	1	0	0	3
	16	35	24	16	6	19	7	2	72

Percentage number of voyages clearing Bideford by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	40	67	93	33	7	60	43	0	15
Severn	-	-	-	-	-	-	-	-	-
Somerset	17	67	33	0	0	17	0	17	6
N. Devon	0	0	50	50	50	0	0	0	2
N. Cornwall	0	50	50	100	0	0	0	50	2
Pemb/Carm	13	38	0	25	25	13	29	0	8
SWN + NTH	0	69	6	31	13	6	29	0	16
CRD	0	50	0	0	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	42	16	21	5	0	32	0	0	19
Unknown	0	2	1	0	0	33	0	0	3
									72

Voyages clearing Bideford by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	38	29	58	31	17	47	43	0	15
Severn	-	-	-	-	-	-	-	-	-
Somerset	6	11	8	0	0	5	0	50	6
N. Devon	0	0	4	6	17	0	0	0	2
N. Cornwall	0	3	4	13	0	0	0	50	2
Pemb/Carm	6	9	0	13	33	5	29	0	8
SWN + NTH	0	31	4	31	33	5	29	0	16
CRD	0	3	0	0	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	50	9	17	6	0	32	0	0	19
Unknown	0	6	4	0	0	5	0	0	3
	100	100	100	100	100	100	100	100	72

Table 3.20: Voyages clearing Ilfracombe by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	0	0	0	0	16	0	0	16
Severn	-	-	-	-	-	-	-	-	-
Somerset	0	2	1	0	0	6	0	0	7
N. Devon	0	0	2	1	0	3	0	1	5
N. Cornwall	0	0	1	0	0	3	0	0	4
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	1	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	1	0	0	8	0	0	9
Unknown	0	0	0	0	0	1	0	0	1
	0	2	6	1	0	37	0	1	43

Percentage number of voyages clearing Ilfracombe by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	0	0	0	0	100	0	0	16
Severn	-	-	-	-	-	-	-	-	-
Somerset	0	29	14	0	0	86	0	0	7
N. Devon	0	0	40	20	0	60	0	20	5
N. Cornwall	0	0	25	0	0	75	0	0	4
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	100	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	11	0	0	89	0	0	9
Unknown	0	0	0	0	0	100	0	0	1
									43

Voyages clearing Ilfracombe by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	0	0	0	0	43	0	0	16
Severn	-	-	-	-	-	-	-	-	-
Somerset	0	100	17	0	0	16	0	0	7
N. Devon	0	0	33	100	0	8	0	100	5
N. Cornwall	0	0	17	0	0	8	0	0	4
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	17	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	17	0	0	22	0	0	9
Unknown	0	0	0	0	0	3	0	0	1
	0	100	100	100	0	100	0	100	43

seventeenth century, moreover, both ports supported a flourishing overseas trade with Ireland, the Newfoundland Banks, the American seaboard, the West Indies and the Mediterranean. As a result, Bideford in particular, was an important entrepot in the fitting out of overseas cargoes and the dispersal of overseas goods. Coastal shipments of tobacco, wine, fruit, spices, soap, and fish to south Wales and Bristol reflected the extent of international commerce. In contrast, Ilfracombe's commercial horizons were defined by its coastal situation and the poverty of its immediate hinterland. Michael Currant, master and part owner of the *Michael* of Bridgwater, found it 'a poor place' when his vessel sheltered there in 1697 and advised strongly that his goods should be returned to Bridgwater 'for to leave it ... will be more loss than the sending back'.[127] 86% of Ilfracombe's coastal exports were in Fishery goods, almost wholly herrings traded under letpass. Agricultural goods, Crafts, Metals, Textiles and Wood were of minimal significance or non-existent. Extractive goods were limited solely to transshipped coal and salt.

Both Barnstaple and Bideford traded a far more comprehensive range of commodities. Crafts and Manufactures were particularly important accounting for over 40% of all shipments. This category comprised such widely produced goods as tallow, tar and pitch and occasional overseas items like oil and sumach from the Straits. Yet by far the most important single traded commodity, the only commodity of note according to Watkins, was earthenware - sgraffito slipware pieces, earthen ovens and occasionally tobacco pipes.[128] Table 3.21 gives an indication of the quantities of earthenware traded from the major regional centres.[129] With regard to the Table, two factors must be born in mind. Firstly, the figures are inclusive of both domestic and imported earthenware, although identifiably overseas products, the infrequent shipments of 'Dutch mugs' and 'Holland earthenware' from Bristol, were comparatively insignificant.[130] Secondly, all volumetric measures in which ware was carried have been given notional 'piece' conversions following Weatherill's admittedly conjectural suggestions.[131] Although Weatherill's caveats must be borne in mind - the amount of earthenware traded overland is unquantifiable, accurate

Table 3.21: Pieces of earthenware traded from regional ports, sample year.

	Bristol	Severn	Som.	N.Devon	Corn.	Pemb Carm	Swansea Neath	Cardiff	Wye	Extra Regional	Cross Regional	Unknown	Total
Bristol	-	13708	9337	7148	-	1319	2989	2310	170	6100	-	-	43081
Gloucester	154843	-	2100	-	-	800	-	-	200	-	-	35	157978
Bideford	7608	-	2040	-	-	600	16320	2400	-	5760	-	780	35508
Barnstaple	2400	2640	600	-	-	4200	2160	1200	1440	2160	1200	-	18000
Bridgwater	200	-	-	-	-	-	-	-	-	-	-	-	200
Milford	-	-	-	-	-	-	-	-	-	-	-	84	84
Liverpool	180	-	-	-	148	194	-	-	1200	14507	-	-	16229

Shipments of earthenware from regional ports, sample year.

	Bristol	Severn	Som.	N.Devon	Corn.	Pemb Carm	Swansea Neath	Cardiff	Wye	Extra Regional	Cross Regional	Unknown	Total
Bristol	-	36	19	12	-	8	7	10	2	5	-	-	99
Gloucester	42	-	3	-	-	1	-	-	1	-	-	1	48
Bideford	8	-	3	-	-	*1*	*13*	*1*	-	*3*	-	*1*	*30*
Barnstaple	2	3	1	-	-	2	2	1	1	2	1	-	15
Bridgwater	1	-	-	-	-	-	-	-	-	-	-	-	1
Milford	-	-	-	-	-	-	-	-	-	2	-	-	2
Liverpool	1	-	-	-	2	2	-	-	1	-	18	-	24

measurement is problematic, and, from comparative figures, the Bristol industry appears to have produced mainly for the overseas and not the internal market - the importance of the north Devon centres is emphasised. Barnstaple and Bideford seem to have supplied the peripheral coastal regions such as south west Wales, as well as trading extensively overland and abroad.

Both Barnstaple and Bideford also drove a moderate trade in most other classes of commodity, although metals were poorly represented: Bristol was almost wholly relied upon for the supply of iron, ironware and steel. Bristol was also the main destination for the shipment of Extractive goods: the class accounted for 65% and 58% of total shipments from Barnstaple and Bideford and was represented on all shipments clearing Barnstaple for Bristol and on 93% of those from Bideford. Tobacco pipe clay and ball clay dug near Great Torrington and shipped from Bideford was the principal commodity. This was in great demand at Bristol and at the Severn ports not only for the production of commercial earthenware but also for making receptacles for the sugar, soap and glass industries.[132] Copper ore was shipped in large quantities, especially after the greater exploitation of the North Molton reserves in 1696.[133] The Swedish engineer Cletscher reported on its shipment as 'ballast...taken into vessels loaded with corn and other goods of equal kinds' and emphasised the comparative importance of Bideford for long-distance coasting. From Barnstaple he commented 'it is generally carried by boat or pram to Bediford ... for it is not possible to call [at] Barnstaple by vessels large enough for the ore's carrying direct to London or Bristol, excepting by the small coal boats from Wales. The latter however cannot carry very much'.[134] Whilst this explains the inter-port trade between Barnstaple and Bideford in Extractive goods, it is does not account for the dominance of Barnstaple as the centre of the copper ore trade as recorded in the Port Books between 1695 to 1704. In 1699 for example, Barnstaple exported 557 tons coastally in 17 shipments, whereas only 4 voyages carrying 91 tons cleared Bideford. However, if ore was carried as ballast, it may have escaped Customs notification altogether.

The Port Books of Padstow and St. Ives (Tables 3.22 and 3.23) reveal an even greater predominance of extractive goods, together with a lesser representation of metals and manufactures. 93% of shipments clearing Padstow and 91% from St. Ives carried Extractive goods, 46% and 33% carried metals, and 7% and 19% included Manufactures respectively, almost wholly destined for Bristol and Chepstow. Trade revolved around the shipment of three vital commodities: copper ore and mundick; tin and bar tin; and pewter and pewter crafts.[135] Whilst much of the output of the copper and tin mines, reckoned to be 'the richest and most productive in Britain, and possibly the world', tended to pass through south-coast ports,[136] in the sample year 1,382 tons of copper ore cleared St. Ives in 39 shipments, 31 of which took 1,184 tons of ore to Chepstow, and 606 tons was traded from Padstow in 23 voyages, mostly to Bristol.[137] In comparison with Truro and Penryn, the main shippers of Cornish metal and ore, lesser quantities of tin were exported. None the less, over 40 tons cleared St. Ives and 33 tons Padstow in 1697.[138]

To an extent this analysis reveals the polarisation of the Cornish economy. The north coast ports were situated in areas of poor, subsistence arable, dominated by conservative agrarian practice and pastoralism. Here industrial pursuits had assumed far greater importance than mere by-employment.[139] Consequently, virtually all the trade in grain and agricultural goods, wood, most crafts, and textiles was inwards. Yet, the lack of diversity is misleading. The Port Book record overemphasises the commercially monofocal, 'peripheral' nature of the locality. Copper ore, tin and pewter were the only goods that it was required to record under coquet and bond.[140] All other commodities recorded were shipped only as part-consignments of these voyages, literally what was crammed into the ship's hold after the principal dutiable goods had been enumerated. Some of the locality's more common products thus have escaped full record. For instance, hilling stones were traded as ballast or by sufferance in open boats, and fish tended to be shipped by letpasses.[141] Similarly, the limited range of destinations noted in Tables 3.22 and 3.23 does not reveal the full commercial horizons of both ports: Bridgwater and Minehead, for example, were

Table 3.22: Voyages clearing Padstow by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	1	23	0	11	1	1	0	23
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	1	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	2	0	0	0	0	0	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	1	0	0	2	0	1	0	2
Unknown	-	-	-	-	-	-	-	-	-
	0	2	26	0	13	1	2	0	28

Percentage number of voyages clearing Padstow by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	4	100	0	48	4	4	0	23
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	100	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	200	0	0	0	0	0	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	50	0	0	100	0	50	0	2
Unknown	-	-	-	-	-	-	-	-	-
									28

Voyages clearing Padstow by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	0	50	88	0	85	100	50	0	23
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	4	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	8	0	0	0	0	0	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	50	0	0	15	0	50	0	2
Unknown	-	-	-	-	-	-	-	-	-
	0	100	100	0	100	100	100	0	28

Table 3.23: Voyages clearing St Ives by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	1	3	5	0	5	1	0	0	5
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	1	1	0	1	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	1	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	31	0	5	5	0	0	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	4	2	0	4	2	0	0	5
Unknown	-	-	-	-	-	-	-	-	-
	2	8	39	1	14	8	0	0	43

Percentage number of voyages clearing St. Ives by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	20	60	100	0	100	20	0	0	5
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	100	100	0	100	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	100	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	100	0	16	16	0	0	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	80	40	0	80	40	0	0	5
Unknown	-	-	-	-	-	-	-	-	-
									43

Voyages clearing St. Ives by commodity class by destination, as % of all *voyages with each class, sample year.*

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	50	38	13	0	36	13	0	0	5
Severn	-	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	50	13	0	100	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	3	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	79	0	36	63	0	0	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	50	5	0	29	25	0	0	5
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	1	100	100	0	0	43

important importers of hilling stones throughout the period.

In contrast, more analytical weight can be placed on the figures for Milford, Carmarthen and Tenby presented in Tables 3.24, 3.25 and 3.26. Letpass cargoes were habitually recorded at these ports and, although the record of Llanelli is erratic, a coherent picture of the trade of south-west Wales can be reconstructed. Culm and coal, mostly high-quality anthracite, governed coastal exports.[142] Extractive goods were thus represented in 81% of shipments from Milford, 97% from Tenby, and 98% from Llanelli. As it was argued in Chapter 2, trade was geographically specific. In 1699, Milford shipped over 12,356 tons of culm and coals, 3,867 tons of which was bound for north Devon. However, the bulk (62%) of Milford's trade by quantity was to ports beyond the region, notably Exeter, Dartmouth and Plymouth. These centres accounted for over 7,605 tons of culm and coals dispatched.[143]

Tenby's trade, mostly in culm, is presented in Figure 3.3. This distinguishes between the principal geographical divisions whilst accounting for the fact that in tightly packed port groupings such as the Taw-Torridge estuary stated destinations did not always equate with precise points of unloading. The graph indicates that the sample year forms a trough with quantities only recovering to levels obtained in 1695-7 by 1701 followed by a further fall. In particular, trade to the north Devon ports appears to have been most affected declining from 2,821 tons in 1695 to a low of 727 tons in 1699 before recovering slightly. Whilst Ilfracombe consistently took around 700 tons, the fall-off was experienced most sharply at the Taw-Torridge ports especially Northam. In comparison, Somerset remained the major focus of trade with levels peaking in 1697 at 4,407 tons, largely the result of the expansion of recorded trade at Bridgwater. However, by the end of the period, supply had switched to Watchet, although this may be a reflection of different recording practices.

The relative position of the coal ports is also indicated in Figures 3.4 and 3.5 depicting coal and culm shipped to Bideford and Bridgwater respectively. With Bideford, supply focused predominantly upon Milford, although the primacy of Milford culm was being challenged quantitatively by bituminous coals from

Table 3.24: Voyages clearing Milford by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	13	9	4	11	10	9	9	0	18
Severn	1	0	0	0	0	1	0	0	1
Somerset	0	0	19	1	0	0	0	0	19
N. Devon	19	4	138	8	0	0	2	0	142
N. Cornwall	1	1	2	0	0	0	0	0	2
Pemb/Carm	1	1	3	0	1	0	1	0	4
SWN + NTH	1	0	0	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	64	9	195	43	4	11	4	3	255
Unknown	1	1	3	0	0	1	0	0	10
	101	25	364	63	15	22	16	3	452

Percentage number of voyages clearing Milford by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	72	50	22	61	6	50	50	0	18
Severn	100	0	0	0	0	100	0	0	1
Somerset	0	0	100	5	0	0	0	0	19
N. Devon	13	3	97	6	0	0	1	0	142
N. Cornwall	1	50	100	0	0	0	0	0	2
Pemb/Carm	25	25	75	0	25	0	25	0	4
SWN + NTH	100	0	0	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	25	4	76	17	2	4	2	1	255
Unknown	10	10	30	0	0	10	0	0	10
									452

Voyages clearing Milford by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	13	36	1	17	67	41	56	0	18
Severn	1	0	0	0	0	5	0	0	1
Somerset	0	0	5	2	0	0	0	0	19
N. Devon	19	16	38	13	0	0	13	0	142
N. Cornwall	1	4	1	0	0	0	0	0	2
Pemb/Carm	1	4	1	0	7	0	6	0	4
SWN + NTH	1	0	0	0	0	0	0	0	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	63	36	54	68	27	50	25	100	255
Unknown	1	4	1	0	0	5	0	0	10
	100	100	100	100	100	100	100	100	452

Table 3.25: Voyages clearing Carmarthen by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	9	4	1	3	1	1	2	1	9
Severn	0	0	0	0	1	0	0	0	1
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	1	0	1	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	1	1	1	1	1	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	14	0	0	4	1	0	0	1	15
Unknown	1	1	0	1	1	0	0	0	1
	25	7	2	10	5	1	2	2	29

Percentage number of voyages clearing Carmarthen by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	100	44	11	33	11	11	22	11	9
Severn	0	0	0	0	100	0	0	0	1
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	50	0	50	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	100	100	100	100	100	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	93	0	0	27	7	0	0	7	15
Unknown	100	100	0	100	100	0	0	0	1
									29

Voyages clearing Carmarthen by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	36	57	50	30	20	100	100	50	9
Severn	0	0	0	0	20	0	0	0	1
Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	14	0	10	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	4	14	50	10	20	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	56	0	0	40	20	0	0	50	15
Unknown	4	14	0	10	20	0	0	0	1
	100	100	100	100	100	100	100	100	29

Table 3.26: Voyages clearing Tenby by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	3	2	4	4	2	4	2	0	5
Severn	0	0	2	0	0	0	0	0	2
Somerset	30	2	102	3	2	4	4	0	102
N. Devon	3	1	41	4	0	0	4	0	42
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	2	0	0	0	0	0	2
SWN + NTH	1	0	2	1	0	0	0	0	2
CRD	0	1	4	0	0	0	0	0	4
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	2	0	7	1	0	0	1	0	9
Unknown	2	1	7	0	0	0	2	0	8
	41	7	171	13	4	8	13	0	176

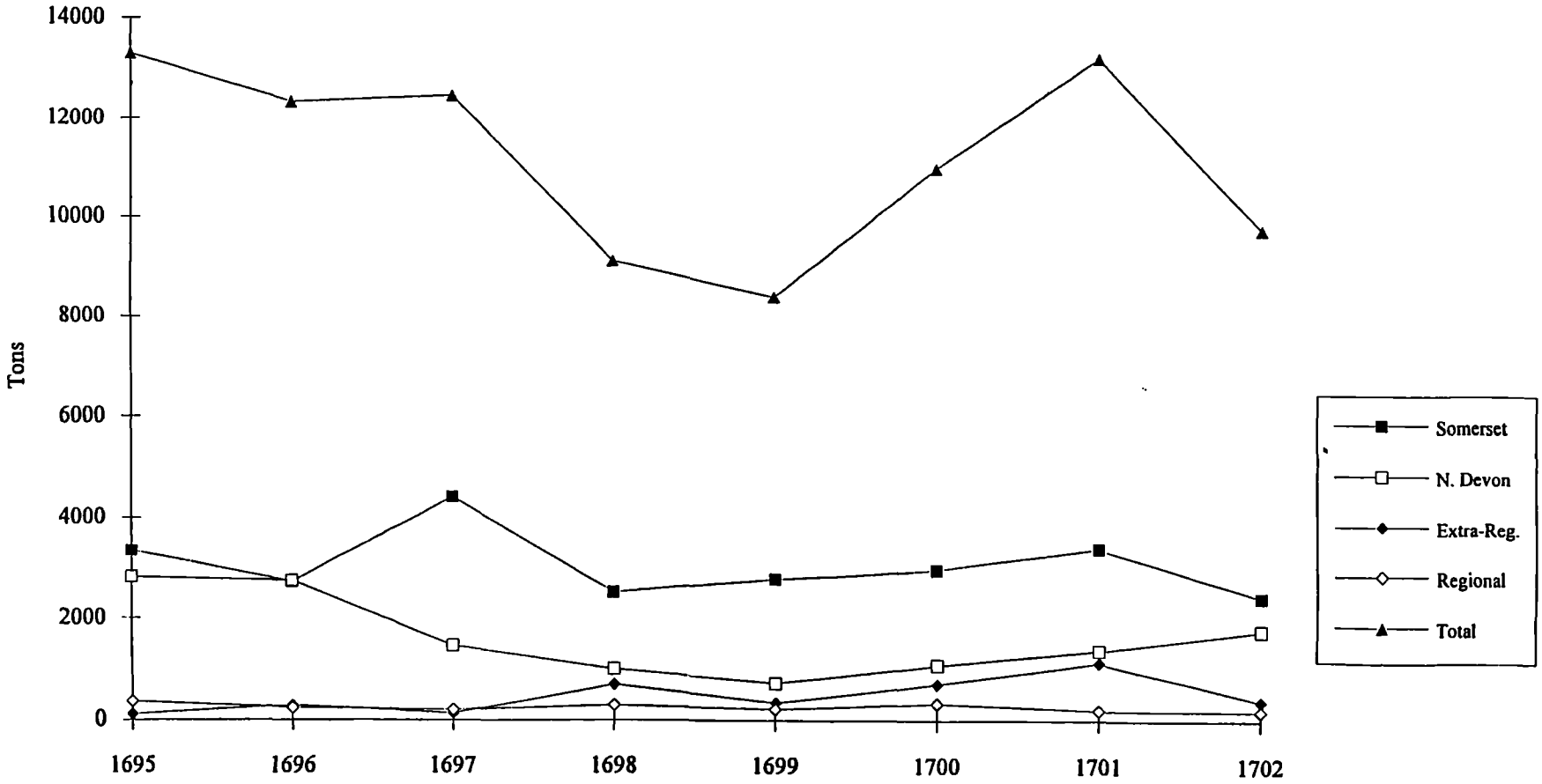
Percentage number of voyages clearing Tenby by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	60	40	80	80	40	80	40	0	5
Severn	0	0	100	0	0	0	0	0	2
Somerset	29	2	100	3	2	4	4	0	102
N. Devon	7	2	98	10	0	0	10	0	42
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	100	0	0	0	0	0	2
SWN + NTH	50	0	100	50	0	0	0	0	2
CRD	0	25	100	0	0	0	0	0	4
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	22	0	78	11	0	0	11	0	9
Unknown	25	13	88	0	0	0	25	0	8
									176

Voyages clearing Tenby by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	7	29	2	31	50	50	15	0	5
Severn	0	0	1	0	0	0	0	0	2
Somerset	73	29	60	23	50	50	31	0	102
N. Devon	7	14	24	31	0	0	31	0	42
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	1	0	0	0	0	0	2
SWN + NTH	2	0	1	8	0	0	0	0	2
CRD	0	14	2	0	0	0	0	0	4
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	5	0	4	8	0	0	8	0	9
Unknown	5	14	4	0	0	0	15	0	8
	100	100	100	100	100	100	100	0	176

Figure 3.3: Coastal export of coals (in tons) from Tenby, 1695-1702.



Glamorgan by 1702. In contrast, Tenby was very much a secondary source of culm, though again imports had picked up to 602 tons by 1702. Supplies from Llanelli, however, appear to fallen exponentially. In 1695, Bideford imported 1,114 tons of coals from Llanelli. This had fallen to a mere 123 tons in 1700, recovering very slightly to 197 tons in 1702. At Bridgwater, the general pattern with regard to the ports of south-west Wales was reversed. Tenby was the sole supplier of culm, whilst only the odd shipment was recorded entering from Milford. As with Figure 3.3, supplies were more prominent in the war years: the 1,082 tons shipped from Tenby in 1698 represented a mere two-fifths of the 2,723 tons recorded in 1695.

Milford, Carmarthen and Tenby also maintained close overland links with areas of productive arable, especially the developed coastal strip and sheltered vales of the pays,[144] and to the immediate north and east poorer upland pasturage supported a substantial livestock rearing enterprise. Agricultural goods thus formed staple commodities, occurring in 86% of shipments from Carmarthen and 22% from Milford and Tenby. Much of this was grain. The three ports shipped 80,886 bushels of cereal crops, over a quarter of the total quantity traded coastways in the region, whilst Cardigan exported a further 17,989 bushels coastally in the sample year.[145] However, unlike Chepstow and Gloucester, the major grain entrepots above the Holms, the ports of south-west Wales were not tied to the market demands of Bristol. A mere 6% of grain was traded to the south-western metropolis as opposed to the 84% shipped to extra-regional ports, mostly to Liverpool.

As Osborne has emphasised, the agrarian economy of south and south-west Wales centred upon the 'ubiquity' of pastoralism.[146] In particular, rearing and dairying in the upland interior were important activities that filtered into coastal trade. Milford, Carmarthen and Tenby thus traded the by-products of animal husbandry such as hides, skins, wool, butter and cheese, and even eggs, the most friable of commodities and, as Chartres has intimated, not regularly associated with long-distance coasting.[147] However, with access to inland stock-rearing grounds, Tenby was the unrivalled centre for the cross-channel trade in livestock. Lean cattle, sheep,

Figure 3.4: Coastal imports of culm/coal (in tons) at Bideford, 1695-1702.

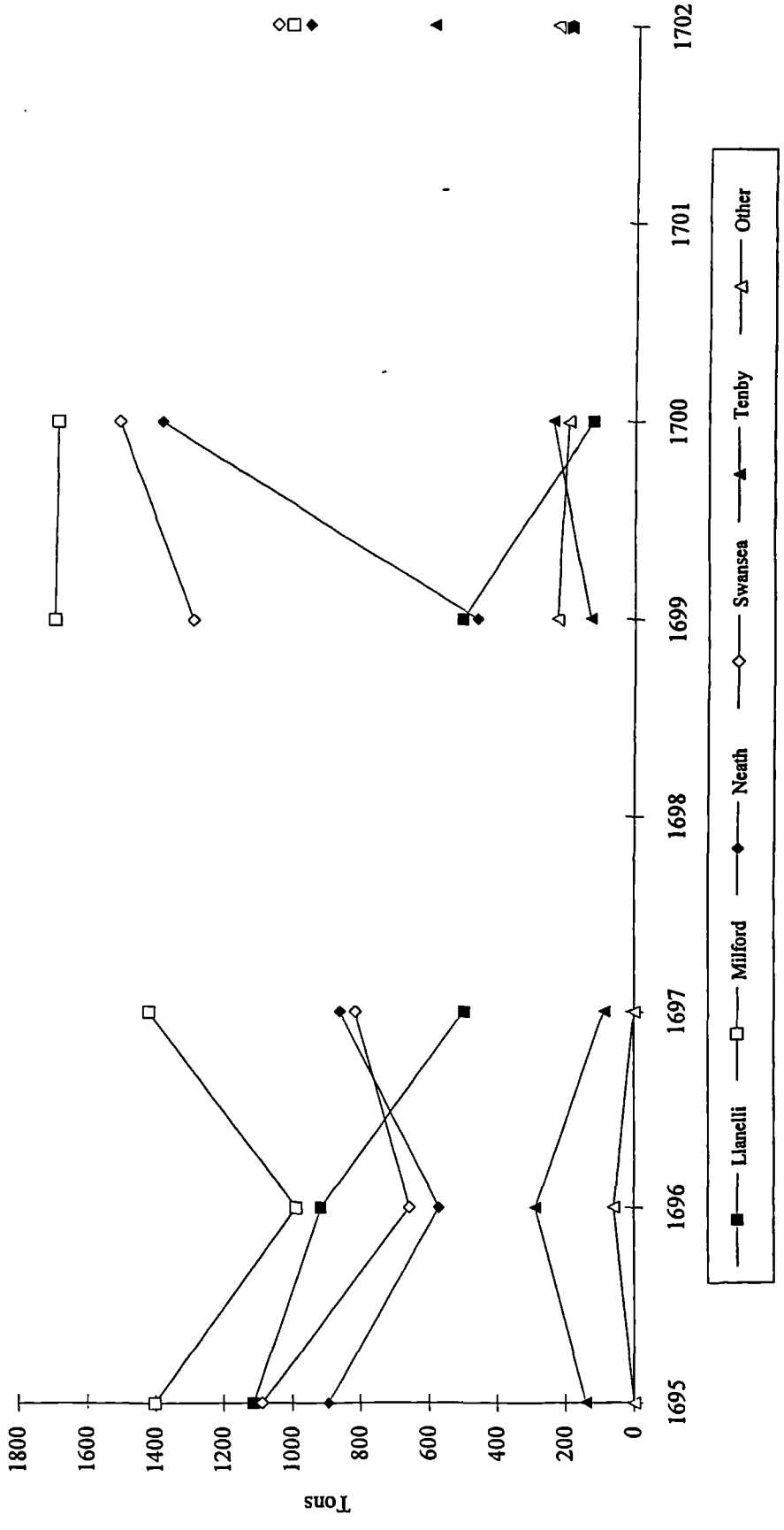
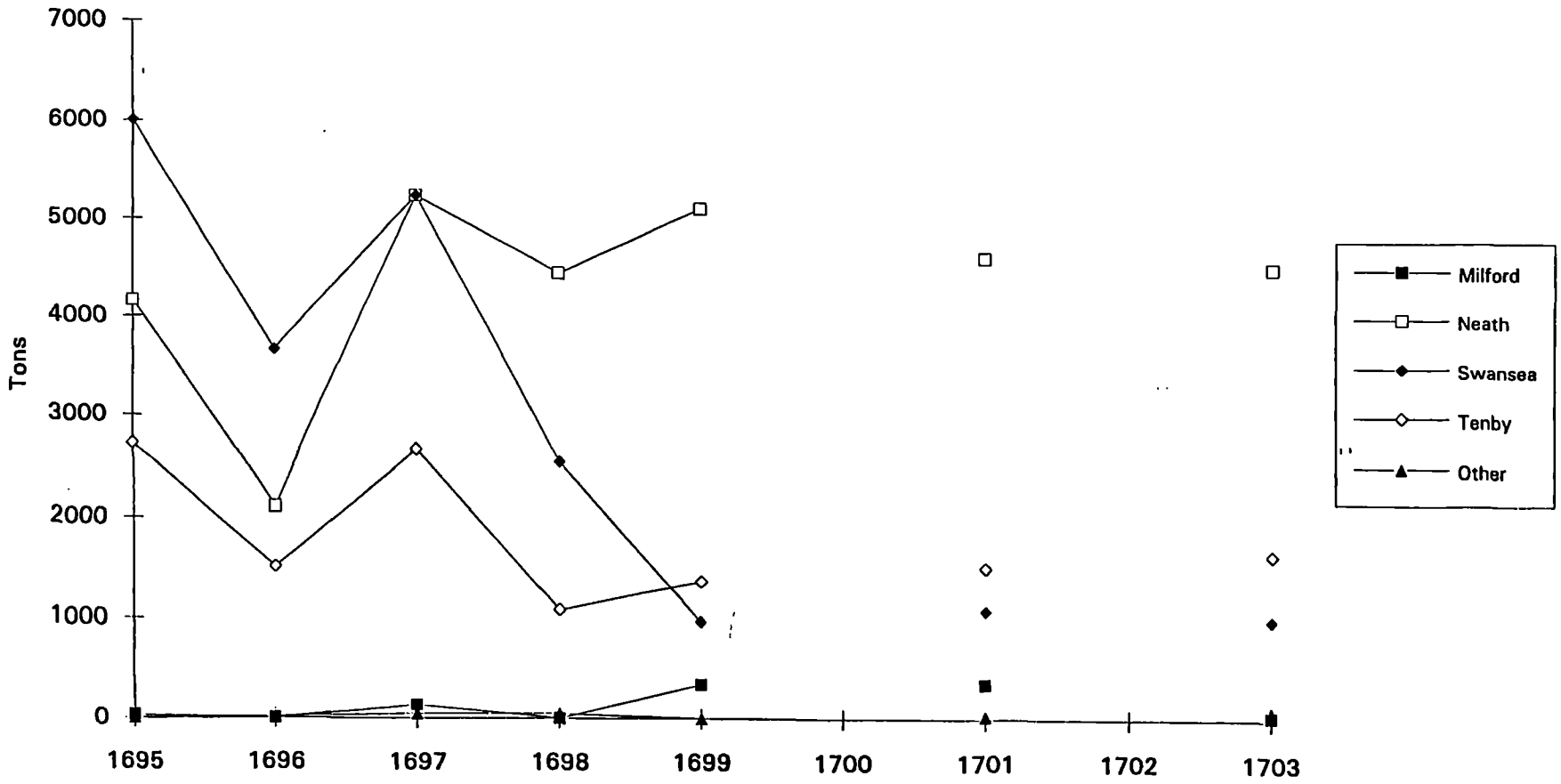


Figure 3.5: Coastal imports of coals and culm (in tons) at Bridgwater, 1695-1703.



and swine were traded to south-west fattening pastures, especially the Somerset Levels, via Bridgwater, Minehead and Watchet and, on occasion, the ports of north Devon. This trade supplemented herds driven overland through Hereford and Gloucester.[148] In 1699 alone, 2,759 swine were shipped in 24 voyages from Tenby almost wholly to the Somerset ports,[149] whilst in the same year 67 other beasts were traded to Minehead and Watchet.[150]

Other classes of commodity were less well represented. Milford and Carmarthen shipped some Food goods, mostly malt, beer, small amounts of grocery and casked and bottled ale. In 1699, the equivalent of 286 barrels of ale was shipped out of Milford in 25 consignments,[151] mainly to Bristol and London.[152] In addition there was a largely unremarkable trade in indigenous low quality cloths like flannel, the produce of rural industries - stockings, leather and gloves - and some fishery goods, mostly pressed and pickled oysters traded from Milford to Bristol and Gloucester.[153] Yet, despite the presence of an established if localised iron industry, very little in the way of metals was traded. All three ports remained net importers of both metals and wood and timberstuff.

By the late seventeenth century, the coastal Port Books for Swansea and Neath were little more than tabular accounts of coal exports. This is reflected in the overwhelming position of Extractive goods revealed in Tables 3.27 and 3.28.[154] Both ports had well developed connections to nearby outcropping seams of bituminous coal and, as with the ports of south-west Wales, trade was characterised by distinct regional specialisms.[155] For example, Swansea traded heavily with the ports of the south-west: in 1701 1,939 tons was sent to Somerset, 1,900 tons to north Cornwall and 1,471 tons to north Devon. However, this was overshadowed by the 6,455 tons dispatched to ports beyond the region, 40% of which was destined for Plymouth. The coal trade of Neath is illustrated in Figure 3.6. Unlike Swansea, trade was geared towards supplying Bristol Channel markets and particularly Bridgwater. Throughout the four years for which annual records are available, Bridgwater accounted for 51% of all coal shipped coastally from Neath, whilst extra-regional

Table 3.27: Voyages clearing Swansea by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	3	4	2	3	4	0	3	1	6
Severn	0	0	1	0	3	1	0	0	3
Somerset	14	1	69	0	3	1	2	0	70
N. Devon	10	7	69	1	2	0	5	0	70
N. Cornwall	13	3	92	1	2	0	2	6	93
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	2	0	0	0	0	0	2
CRD	0	0	2	0	0	0	0	0	2
Wye	0	0	8	0	0	0	0	0	8
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	47	14	221	0	1	0	1	6	223
Unknown	15	7	50	2	5	1	1	1	54
	102	36	516	7	20	3	14	14	531

Percentage number of voyages clearing Swansea by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	50	67	33	50	67	0	50	17	6
Severn	0	0	33	0	100	33	0	0	3
Somerset	20	1	99	0	4	1	3	0	70
N. Devon	14	10	99	1	3	0	7	0	70
N. Cornwall	14	3	99	1	2	0	2	6	93
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	100	0	0	0	0	0	2
CRD	0	0	100	0	0	0	0	0	2
Wye	0	0	100	0	0	0	0	0	8
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	21	6	99	0	0	0	0	3	223
Unknown	28	13	93	4	9	2	2	2	54
									531

Voyages clearing Swansea by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	3	11	0	43	20	0	21	7	6
Severn	0	0	0	0	15	33	0	0	3
Somerset	14	3	13	0	15	33	14	0	70
N. Devon	10	19	13	14	10	0	36	0	70
N. Cornwall	13	8	18	14	10	0	14	43	93
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	0	0	0	0	0	0	2
CRD	0	0	0	0	0	0	0	0	2
Wye	0	0	2	0	0	0	0	0	8
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	46	39	43	0	5	0	7	43	223
Unknown	15	19	10	29	25	33	7	7	54
	100	100	100	100	100	100	100	100	531

Table 3.28: Voyages clearing Neath by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	7	3	9	1	1	0	0	2	16
Severn	0	0	2	0	0	0	0	0	2
Somerset	3	0	208	0	1	0	0	1	208
N. Devon	4	2	107	0	0	0	0	0	108
N. Cornwall	1	0	39	0	0	0	0	0	39
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	0	2	0	5	0	0	0	7
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	1	2	51	1	2	0	0	0	53
Unknown	0	0	4	0	0	0	0	0	4
	16	7	422	2	9	0	0	3	437

Percentage number of voyages clearing Neath by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	44	19	56	6	6	0	0	13	16
Severn	0	0	100	0	0	0	0	0	2
Somerset	1	0	100	0	0	0	0	0	208
N. Devon	4	2	99	0	0	0	0	0	108
N. Cornwall	3	0	100	0	0	0	0	0	39
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	0	29	0	71	0	0	0	7
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	2	4	96	2	4	0	0	0	53
Unknown	0	0	100	0	0	0	0	0	4
									437

Voyages clearing Neath by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	44	43	2	50	11	0	0	75	16
Severn	0	0	0	0	0	0	0	0	2
Somerset	19	0	49	0	11	0	0	25	208
N. Devon	25	29	25	0	0	0	0	0	108
N. Cornwall	6	0	9	0	0	0	0	0	39
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	-	-	-	-	-	-	-	-	-
CRD	0	0	0	0	56	0	0	0	7
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	6	29	12	50	22	0	0	0	53
Unknown	0	0	1	0	0	0	0	0	4
	100	100	100	2	100	0	0	100	437

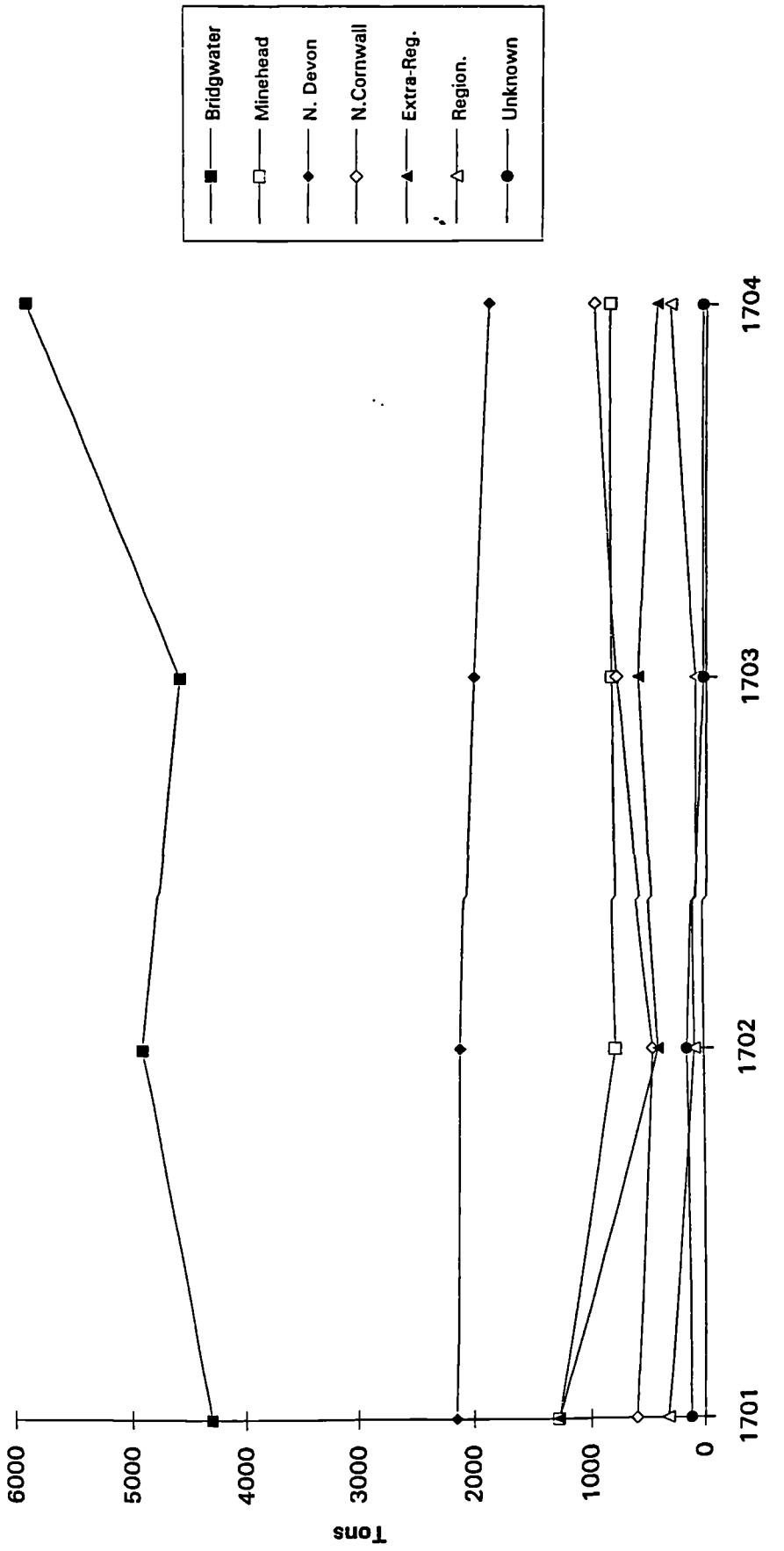


Figure 3.6: Coastal exports of coals (in tons) from Neath, 1701-4.

ports took barely 7% of recorded trade. Neath also supplied the ports of north Devon, principally Bideford, and both the north Cornish ports and Minehead were consistent customers of Neath coals. In contrast, only 312 tons cleared South Burry in the sample year, entirely destined for north Devon.

The relative importance of Swansea and Neath as suppliers of coal for the region is also demonstrated in Figures 3.4 and 3.5. By the eighteenth century the ports were supplying over half the trade at Bideford with Swansea the most prominent, and around four-fifths of Bridgwater's annual requirements. However, at Bridgwater supplies of Neath coals became increasingly predominant. Whilst Swansea supplied around half Bridgwater's needs in 1695 and 1696, this had slumped to around 14% between 1699 and 1703. During the same period, Neath's percentage share rose from around 30% rising to over 60% of the port's supplies.[156] No doubt the rise of Neath as a significant coal exporter coastwise was the result of the development of the town and its industrial base by Sir Humphrey Mackworth and the Company of Mine Adventurers. It was alleged in 1705 that Mackworth discovering the town poor 'for want of trade' in 1695 'began to adventure great sums of money in finding and recovering the coal ... since which time ... Neath ... is now become one of the best towns of trade in south Wales'.[157] Although Mackworth was beset by unscrupulous competition and disruption, the figures for Bridgwater at least would appear to bear out some of the more colourful hyperbole.[158]

Other commodities recorded at Swansea and Neath were in general only allied to coal shipments. The exceptions to this were wool, legally required to be noted separately; the occasional shipment of glass from Swansea; pig iron, mostly carried to the Pontypool forges via Cardiff;[159] and copper, lead, red lead and litharge from the area's nascent metallurgical industries.[160] In addition, both Swansea and Neath were surrounded by good agricultural land. In the Gower peninsula and the coastal strip, mixed arable and extensive husbandry regimes prevailed, whilst a vast swathe of rather barren upland pasturage existed to the north of both ports where marginal grazing and livestock rearing were practised.[161] This distinction between Bro and

Blaenau was reflected in the coastal trade.[162] Although grain was not a substantial item of trade, butter was prominent alongside coal consignments. In 1701, Swansea exported almost 446 cwt of butter in 92 shipments, the majority going to Plymouth, Bridgwater and north Devon, whilst Neath exported a mere 22.5 cwt.[163] The ports also traded small quantities of timber goods such as barrel staves and tree nails, textiles such as flannel, and a few manufactured goods like stockings and tallow.

The final two customs ports, Cardiff and Chepstow (Table 3.29) were dominated by the shipment of agricultural goods. Cardiff and its creeks were the natural centres through which the agricultural surpluses of the highly developed mixed arable and pasturage grounds of the Vale of Glamorgan and Severnside lowlands were translocated.[164] Similarly, Chepstow handled the output of the productive corn-livestock economies of the Monmouthshire borders and the central Herefordshire plain.[165] Orcharding in this area had also become a major agrarian specialism and cider and perry figured strongly in the coastal exports of Chepstow.[166] Secondly, although Chepstow was developing a significant overseas trade at this time, especially with Ireland, both ports were almost exclusively dependent upon the Bristol market. This trend was most apparent in the trade in cereals: in the sample year, 70,418 bushels were shipped from Chepstow to Bristol and 14,137 from Cardiff, some of which was undoubtedly passed on to the city's surrounding hinterland.[167] Dairying and livestock-rearing were also important in the Vale of Glamorgan. In the sample year, Cardiff shipped small quantities of butter (21 cwt), wool and live sheep (224 beasts) to Bristol. Some of this trade was again destined for the surrounding counties. For example, in 1693 Edward Martindale, an overseas merchant of Bristol, was buying butter from south Wales for transportation to his clients and family inland.[168]

However, the Port Books have over-emphasised the comparative significance of Agricultural goods at both ports. Cardiff and Chepstow were 'coquet' ports and as a result trade may have been under-recorded by as much as 10%. What is more, the Chepstow officers regularly reduced cargoes to their most Customs-worthy constituents, thereby omitting smaller items of trade, such as wood and millstones.

Table 3.29: Voyages clearing Chepstow by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	267	15	9	0	61	0	0	1	295
Severn	5	0	0	0	20	0	0	0	25
Somerset	0	0	0	0	9	0	0	0	9
N. Devon	1	0	0	0	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	0	0	2	0	0	0	2
SWN + NTH	0	0	0	0	1	0	0	0	1
CRD	0	0	0	0	2	0	0	0	2
Wye	0	0	0	0	1	0	0	0	1
Cross-Reg	1	0	0	0	2	0	0	0	3
Extra-Reg	0	0	5	0	0	0	0	0	5
Unknown	0	0	0	0	0	0	0	0	1
	274	15	14	0	98	0	0	1	345

Percentage number of voyages clearing Chepstow by commodity class by destination, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	91	5	3	0	21	0	0	0	295
Severn	20	0	0	0	80	0	0	0	25
Somerset	0	0	0	0	100	0	0	0	9
N. Devon	100	0	0	0	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	0	0	100	0	0	0	2
SWN + NTH	0	0	0	0	100	0	0	0	1
CRD	0	0	0	0	100	0	0	0	2
Wye	0	0	0	0	100	0	0	0	1
Cross-Reg	33	0	0	0	67	0	0	0	3
Extra-Reg	0	0	100	0	0	0	0	0	5
Unknown	0	0	0	0	0	0	0	0	1
									345

Voyages clearing Chepstow by commodity class by destination, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	97	100	64	0	62	0	0	100	295
Severn	2	0	0	0	20	0	0	0	25
Somerset	0	0	0	0	9	0	0	0	9
N. Devon	0	0	0	0	0	0	0	0	1
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	0	0	2	0	0	0	2
SWN + NTH	0	0	0	0	1	0	0	0	1
CRD	0	0	0	0	2	0	0	0	2
Wye	0	0	0	0	1	0	0	0	1
Cross-Reg	0	0	0	0	2	0	0	0	3
Extra-Reg	0	0	36	0	0	0	0	0	5
Unknown	0	0	0	0	0	0	0	0	1
	100	100	100	0	100	0	0	100	345

Thus, only in agricultural produce or metals, (largely copper from Redbrook and bar and pig iron from Dean and Brockweir traded to Bristol or up-Severn),[169] do recorded levels of trade seem to approximate to the 'actual' levels of coasting. The Cardiff data are yet more problematic. For the later seventeenth and eighteenth century, no account was made of the creeks under Cardiff's immediate superintendence. Thus, Aberthaw, which pursued a considerable trade in livestock, butter, flannel and stockings with Minehead, is omitted, and no record is given of the exports, if any, from the metal-working centres of Newport and Caerleon.[170] What remains is a curtailed account of goods clearing Cardiff town quay and bound solely to Bristol. If Port Book evidence is to be used to study this area, corrective allowances must be made.[171]

iv. Contextualising the sample year: the evidence of coastal imports and the wider sample.

For most commodities and for most ports, the Bristol Channel was a commercially integrated zone: the coastal clearances of one port were by and large the imports of another. Although this simple canon was more challenged at the edges - Milford and Mount's Bay were highly peripheral ports and commodities such as coal, culm and high quality goods from Bristol found ready markets outside the region - the overriding picture is one of economic cohesion. Nevertheless, it would be crass to presume that intra-regional trade held true for all commodities and for all ports. For this reason, both coastal imports and the seven ports covered by the wider sample have been analysed according to the system of goods classification. These data are presented in Appendices 3 and 4.

The problem with reconstructing regional patterns of inwards trade is that records for Bristol and Glamorgan are crucially absent. Any comparative examination is thus partial and slanted towards the south-west of England. Despite this, the analysis of coastal imports has a threefold utility. Firstly, and rather

prosaically, it is only through the understanding of the range of coastal entrances recorded at centres for which Port Books were most comprehensive - Bridgwater, Minehead, Ilfracombe, and Milford, for example - that the omissions of other coastal Port Books can be appraised and the extent of 'latent' trade recognised. Without, the records of Minehead and Bridgwater, it would be impossible to reconstruct the livestock trade from Neath; the sheep, stockings and butter exported from the creeks of Cardiff; or the amount of metalware clearing Newport. Similarly, the Gloucester and Bridgwater Port Books confirm the Wye ports to be major centres in the trade in walnut and elm timber, which was noted erratically in the Chepstow records.[172]

As the figures for coal and culm imports have demonstrated, an analysis of inwards trade reveals how supply was organised locally. For example, although the trade of Gloucester was dominated by Bristol, shipments from Chepstow, in mainly Upton and Tewkesbury boats, were well represented in Agricultural goods (mostly cider), Metals and Wood. Further away from the above-Holms heartland, the influence of Bristol was more diffuse. Yet, even in the ports of the south-west, where the bulk of trade was slanted towards coal imports, Bristol controlled the trade in the principal high-value classes of commodity - Food, Metals and Manufactures. The exceptions to this were Ilfracombe and Milford where centres from beyond the region, notably Plymouth and Liverpool, held significant shares in these classes of good. The wider parameters of the outwards trades of these ports, especially in fish and culm and grains, may hold the key to these directional patterns.

Appendix 3 also reveals the significance of extra-regional ports in regional trade. For example, Bideford and Barnstaple record cargoes of prize goods, such as salt and textiles, and naval stores, shipped in from Scilly and the south coast, notably Plymouth. In addition, many of the major ports - Bridgwater, Minehead, Milford, Bideford and Barnstaple - received small consignments of East India goods, miscellaneous overseas commodities, and items generically described as London (or Londoners') goods from the capital.

However, these were minor, isolated trades compared to the trade in

Extractive goods. At Bridgwater, Minehead, Ilfracombe, Bideford, Padstow, St. Ives, Carmarthen, and Chepstow, over half of all voyages entering from ports beyond the Bristol Channel carried this class of commodity. The most important goods were the odd shipment of hilling stones from south Cornwall, copper ore from Truro and Penryn and Cheshire white and rock salt primarily from Liverpool. The trade in salt, a staple that was vital to the inshore and Newfoundland fisheries of the region, was profitable enough to withstand the risky, long-distance voyage from the north-west and as such large cargoes were a regular feature of the inwards trade of the south-western ports. The Liverpool Port Books reveal that 4,024.69 tons of rock and white salt were shipped to Bristol Channel ports in 1699, representing some 54% of exports by quantity.[173]

These broad patterns of trade are emphasised in the longer sample presented in Appendix 4. The seven ports in this sample represent both major centres of trade and the administrative division of the region according to Customs head port. As a result, both a wide geographical representation and the consistency of Port Book record is assured. However, Appendix 4 presents data in a chronologically compressed form: years in which considerable variance may be present are contracted into a single analysis. In addition, the 'holes' in the datasets are most pronounced: for Padstow and Neath no one year can be fully reconstructed for the periods, 1698-1702 and 1695-1700 respectively. None the less, the wider survey broadly confirms the structural and sectoral findings of the single year sample. Understandably, the impact of newly produced or newly traded commodities has imposed some change in the relative position of some classes of commodity at certain ports. For example, processed lead, and lead ores were increasingly part of the coastal exports of Neath as Mackworth's Melincryddan works began to dispatch considerable quantities to London and Bristol. More coals were also sent principally as back cargo to Cardigan and Aberdovey, the shipment centres for lead ore mined under the aegis of Mackworth's Mine Adventurers. By 1704, Mackworth's control of both commodities had extended into a bilateral trade organised and shipped in his own boats.[174]

Elsewhere, expansion in the industrial and manufacturing sectors is apparent. Bristol's share of Metal goods was enhanced by greater shipments of brass from 1701, and Bideford's reliance upon earthenware, copper ore and pipe clay exports was tempered by tobacco traded coastally and overland. In a negative light, the absence of letpass cargoes at Padstow has rendered the Port Books for 1703 merely a record of shipments to Bristol. In contrast, the limited record of inwards shipments at Tenby in 1699, a poor year for the port, is balanced by the fuller record of trade in the longer sample. For example, letpass cargoes of wood from Llanelli and of hilling stones from Cornwall supplement the more formal coquet trades from Bristol and Liverpool. In general, the ten-year sample reveals surprisingly little sectoral change and that which can be perceived is of a limited nature. Evidently, major quantitative fluctuations in individual commodities may be subsumed within the data. The trade in coal and culm from south Wales, and also the shipment of lead and lead shot from Bristol reveal how profoundly trade could be affected by economic variables. It is probable that more thorough longitudinal studies for other commodities will confirm this picture. None the less, whilst the wider survey suggests that war applied complex oppressive and permissive stimuli to trade, it highlights the period between 1698 and 1701 as one of comparative stability.

The overriding feature of the longer sample is the vital importance of Bristol. In the sectors of Manufactures, Food and Drink and Metals, the port was central in organising supplies throughout the region. This was felt not only in the core hinterland, the above Holms area, but also in the more peripheral centres. Coastal imports into Bideford, Bridgwater and Padstow between 1695 and 1704 indicate the dominance of Bristol in the classes of Metals, Crafts and Manufactures, Food, and Textiles, although at Padstow the omission of petty letpass trades is a contingent factor. With regard to Tenby, the ten-year survey at least provides evidence that 1699 was not a good year for trade in general, and, in particular coastal imports, of which only ten shipments were recorded in 1699. Even so, shipments from Bristol represented over half of all voyages carrying Agricultural goods, Crafts, Food and

Drink, Metals, Textiles, and more surprisingly Fishery goods (mostly train oil) to Tenby. Similarly, Bristol was the principal destination for all classes of goods clearing Gloucester, Bridgwater, and, less surprisingly, Padstow. At Gloucester, the link with Bristol remained the defining feature of all sectors of the commodity trades. This was even the case with Extractive goods. Although it was the only major sector of goods traded beyond the upper Holms area, being increasingly dominated by salt shipments to Somerset and Devon, it was, none the less still focused on Bristol. Undoubtedly, this pattern was less strongly felt at the coal ports, Tenby and Neath, where in terms of goods and shipments Bristol never featured as a principal direction of trade. Similarly, at Bideford, extra- regional ports, especially Liverpool, Exeter and Plymouth, were more important than Bristol in coastal exports of Crafts and Manufactures, the largest class of commodity represented (mostly in the form of earthenware) and Food and Drink (tobacco, wine and malt). Again, Bideford was dealing to a more constricted market, and it was little point trading such goods to a centre which produced or imported large surpluses, The directional patterns of coasting outlined at Bideford for the wider survey suggest that coastal imports of salt from Liverpool and even miscellaneous goods from the south coast were the engines behind the outwards trade.

v. Conclusion.

This analysis has attempted to tease out the most important features of the regional coastal trade in goods. To an extent, it has been a work of contraction and 'informed omission'. Even with the aid of sophisticated computerised techniques, no analysis can ever do complete justice to the complexity and diversity of the total sum of commodities traded. None the less, the single year sample, reinforced by the longer survey has managed to enlarge and refine the initial forays into the trade in goods presented by Willan and more latterly Wakelin. In so doing, both the general sectors of goods and the most heavily traded individual commodities have been emphasised.

It would be foolish to suggest that regional trade embraced a panoply of goods and the fact remains that for ports the single coal shipment remained the definitive feature of coastal trade. However, this has to be balanced by the highly diverse and high value cargoes emanating not just from the acknowledged entrepots of the region - Bristol and Gloucester - but also from ports such as Bridgwater, Minehead and Milford, traditionally regarded as marginal centres within the hegemony of the commercial 'metropolis' of Bristol.

It has been demonstrated that complex linkages often underpinned the coastal trade in the period. The comprehensive programme of computerised analysis has revealed distinct commodity-specific patterns. For example, it has shown that the trade in fish was effectively limited to Ilfracombe, and that the north Devon ports were minor rivals to Bristol in the trade of overseas goods such as tobacco and train oil. In the case of earthenware, regional trade was effectively partitioned between the north Devon ports, which supplied the south west, south Wales and had some trade with Bristol and the Severn ports; Staffordshire and Worcestershire ware traded almost wholly to Bristol; and locally produced and transshipped Severn goods sent coastwise from Bristol throughout the region and beyond in rather smaller consignments. Similar patterns can be found in the trade in glass and glassware divided between Bristol and Gloucester and in the highly specific demand for coal and culm exhibited by the south west ports. On a more restricted level, even such a minor trade as Pembrokeshire ale shipped from Milford has been demonstrated to have been dependent upon large urban markets: almost all the ale shipped in 1699 was destined for Bristol or London. This example, insignificant in the totality of regional coasting, none the less illustrates the potential pathways through highly complex and heterogeneous data. With computerisation this can, within certain methodological boundaries, be applied to any of the commodities listed in the Port Books. It is hoped that this Chapter has highlighted some of the more important trades.

The analysis of the trade in goods has also emphasised the cohesion of the Bristol Channel region. The bulk of coasting took place within the confines of an

essentially limited littoral area bounded by Milford and Penzance. Without doubt, certain trades, notably Cheshire salt, return cargoes of agricultural goods, and culm and coals traded from Milford and Swansea, were economically profitable enough to regularly counteract the very physical constraints imposed on coasting beyond the region. Despite these factors, coasting in the Bristol Channel operated around two basic and very contrasting trades. On the one hand, coal was the imperative for much regional trade, and the frequency and quantity of its shipment marks out the Bristol Channel as a distinctive and self-contained zone of energy use. Coal and, to a lesser extent, salt were independent trades that bypassed Bristol.

Nevertheless, Bristol and the links it maintained throughout the region formed the second dynamic to the trade in goods. This was felt most keenly in the sheltered 'above-Holms' area where the centripetal influence of the Bristol market was demonstrably greatest. Bristol sucked in the goods and raw materials of Cardiff, Chepstow and the Severn ports, dispensing in return large and varied cargoes assembled from domestic goods and the products of the city's extensive transoceanic trades. In the Bristol Channel proper, the 'metropolitan' impact of Bristol was diffused but still vitally important. In terms of shipments, Bristol played only a minor role in the trade of Cornwall and Pembrokeshire. Even so, it was still the principal centre for the coastal redistribution of high-value, miscellaneous and manufactured goods even in areas where other centres had a proportionally larger share of total trade. The analysis of the sectors of goods bears out the significance of Bristol cargoes in the inwards shipments of all regional ports. It is interesting to note that whilst the demand for Cheshire salt sparked a vigorous trade with Liverpool in this period, vessels from Liverpool rarely ventured more in addition than the odd Irish frieze when trading to the Bristol Channel. This suggests that Bristol so dominated the regional supply of many goods as to exclude other avenues of supply: Liverpool was sending out large multi-valued cargoes to north-western centres at this time, but rarely beyond north Wales. Thus, the commercial metropolitanisation of trade, reflected in the impact of the high-value Bristol cargoes, and gauged by the virtually monopoly enjoyed by the

port in the wine and tobacco trades, for example, formed the cornerstone of coasting and the economic cement to the region in the early eighteenth century. Indeed, as Morgan has emphasised, Bristol's control of these key trades was not to be seriously challenged for perhaps another fifty years.[175]

Chapter 4: The organisation of regional trade: owners, operators, merchants and boats.

Port Books have generally been used to supply quantitative data on the trade in staple commodities. Davis, for example, utilised such data to fill in the 'statistically blank' years of the 1670s and 1680s.[1] However, such an approach ignores arguably the most important element in understanding coastal trade and the domestic economy: the mechanisms by which trade was facilitated and organised. We know very little about the structural basis to coasting in the seventeenth and early eighteenth centuries beyond rather sketchy details of individual voyages and operators. Behind this simple formulation, important questions as to the economic and social relationships underpinning trade remain barely formulated. We are at a loss to determine how coastal ships were chartered, who freighted the boats, and what interest masters had in the cargo. Were they, for example, little more than factors for a merchant class unrecorded in the coastal Port Books, or did they possess a controlling interest in both the boat and significant portions of its cargo?[2] In the same vein, can the 'merchants' or 'indenturers' recorded in the Port Books be firmly and unequivocally associated with all or part of the cargo? In addition, the structural basis to coasting has to be examined more critically. In extrapolating data from the Port Books, we must ask whether the visible patterns of control fully explain trading relationships, or do they merely reflect the administrative and financial network by which bond monies were surrendered as surety for the legal completion of the voyage?

The extent to which these questions can be addressed using Port Book evidence forms the basis to this chapter. However, it must be remembered that pre-industrial coastal trade was not, in the words of Freeman, locked into unsophisticated 'pseudo-primeval' forms of organisation. Just as canal and wagon transport has been shown to have responded to subtle market fluctuations, the decisions of merchants to opt for coasting in preference to competing systems were the products of convoluted and individualistic stimuli.[3] Coasting offered a highly developed form of transport

and the framework through which trade in a variety of goods was undertaken was no less complex.

Historians have recognised the utility of coastal Port Books in reconstructing mercantile communities and analysing the framework within which they operated. Willan, for example, focused upon the highly organised and capitalised east-coast coal trade.[4] Elsewhere he emphasised that coasting was 'casual and haphazard', venturing that 'it is, perhaps, largely a misnomer to speak of the organization of the coasting trade at all'. This assessment he admitted sprang from a lack of 'more intensive research [and] more detailed studies of the trade of particular ports and even of particular merchants'.[5] To a great extent, Woodward's work on Elizabethan Chester achieved this aim, albeit for a single port over a more limited period. By combining information from the Chester Port Books with local sources, Woodward was able to uncover the role of the city's merchants in the Irish, continental and domestic trades. However, in the absence of more corroborative evidence of mercantile activity, Woodward admitted that the operation of trade remained somewhat shadowy, and that the evidence of the Port Books had to be taken largely at face value.[6] Similarly, research on Hull, Boston, and Ipswich using Port Books has provided important data on the operation of local merchants in this period.[7] Metters, in particular, has succeeded in integrating Port Book data into an incisive prosopographical study of the urban and corporate elite of early seventeenth century King's Lynn.[8] However, such studies have tended to concentrate upon the pre-Restoration period and to focus upon those overseas merchants who were involved with the high profile and high profit trades and connected more intimately with the civic hierarchy.[9] The coastal merchant, or tradesman to use Defoe's slightly derogatory classification, remains far more elusive.[10]

With regard to the Bristol Channel region, most research has focused upon the Bristol merchants. Many studies have examined the formal, collective action of such merchants in organising the economic and political response of the city to increased commercial opportunity in the seventeenth and eighteenth centuries, especially in the

more remunerative branches of foreign trade.[11] For example, Sacks has charted the political and social realignment of corporate Bristol, and the tension between and reactions of Bristol's merchants and tradesmen in the crucial phase of the commercial and physical growth of the seventeenth century city.[12] Although it would be churlish to criticise a work exemplary in so many respects, Sacks did not choose to emphasise the internal linkages of Bristol. Very little discussion is spent describing how a city of this size organised its supply of food or raw materials, compiled overseas cargoes, or dispersed domestically produced goods and commodities from the burgeoning 'Atlantic economy' throughout its hinterland. The impacts of this 'gateway' city upon its domestic region must have been extensive, not only in terms of the more quantifiable economic and commercial gains, but also in such sectors as social and cultural development. However, these are only hinted at and Sacks has been content to reiterate Minchinton's metropolitan paradigm in order to flesh out the domestic perspective to Bristol's growth.[13]

The lack of criticism concerning the organisation of Bristol's home trade is reflected in many other studies, both of Bristol itself, and of the wider region. In the latter case, descriptions of trade are related to Bristol's perceived structural centrality. Although studies have addressed how goods, in particular agricultural staples, were marketed regionally and how this was affected by greater capitalisation, urbanisation and demand during this period, little has been written about the local middlemen, the wholesale factors, and especially the merchant-shippers who dispersed goods throughout the Bristol Channel.[14] Thus, Willan's call for more attention to be paid to how local merchants operating in the coastal trade organised their businesses has been very largely ignored.

The careers of some individual merchants, albeit with tenuous connections to coasting, have been briefly examined.[15] However, the potential of coastal Port Books to aid research into operators and traders has perhaps only been explored in any depth by Wakelin's discussion of the salt and tobacco trades of the river Severn and Cox's analysis of Abraham Darby I.[16] Wakelin concentrated mainly upon analysing the

levels and directions of trade as indicated by the Gloucester coastal Port Books. The ownership of the cargo and the relationship between the merchant, the goods being studied, and the often highly miscellaneous additional goods also shipped, was not explicitly scrutinised. As Wakelin admitted, separating merchant-carriers from merchant-dealers presents difficulties. Thus, the merchant recorded in the Port Books may have owned the goods outright, or have acted as a middleman or even have been no more than a glorified hired 'porter'.[17]

Cox's work, however, has shown new ways in which evidence from the coastal Books can be combined with other sources to reconstruct the organisation of internal trade. From the Coalbrookdale accounts it is apparent that Abraham Darby I used a number of Severn trows to deliver pig iron and castware to Bristol and to ship coal, iron, callamy and possibly other high-value comestibles upstream. However, he was not recorded in the Gloucester Port Books as merchant to such vessels. Darby operated through carriers, economically subordinate, jobbing trow-owners and operators, like Edward Owen of Madeley, George Bradley, and Thomas Williams of Broseley and their associates. It is their names which appear in the Port Books as merchants for Darby's goods.[18]

Darby's activities serve as an important case study and reminder of some of the potential pitfalls of using Port Book evidence uncritically. However, we have to ask ourselves whether the example of Darby as the hidden organiser and merchant behind Owen, Bradley and Williams was typical of other industrialists and factors? Darby may be regarded as somewhat of a special case. He was, after all, a newcomer operating out of a rapidly developing industrial area. Yet did such patterns apply to boat-owners based at the more established corporate towns or did they trade more on their own account? Dr. Wanklyn has raised some of these questions in relation to the trade of Shrewsbury and Bridgnorth. His work suggests that the type of freightage relationship between Darby and his carriers and also petty trade by individuals existed side by side, with the merchant-shipper a significant figure in the trade of both towns. Even so, Wanklyn did not attempt to assess the relative importance of these two forms

of mercantile organisation because of the tenuous and scattered nature of the evidence.[19]

The search for comprehensive answers to such questions is often illusory. It is impossible to disentangle the complex and often highly idiosyncratic patterns of control, ownership and freighting behind every shipment recorded in the coastal Books, without further evidence. This is less of a problem with regard to the smaller pre-1640 Port Books which often contain more detailed descriptions of merchants. However, by the late seventeenth century, the historian is not readily able to decode the web of capital and familial linkages that must have underpinned the bald description of 'master and merchant' that accompanies so many Port Book entries. Commercial relationships can only be deciphered by accessing other sources that may open up chinks of light into a hitherto largely impenetrable area. As Sacks has recently stressed, in an admittedly wider context, 'economic history demands attention to literary documents and cultural artefacts as well as statistical sources, and an ability to read and observe as well as to count'.[20] This chapter seeks to integrate such an approach with a quantitative analysis of coastal Port Books. The discursive sources used in this section are more scattered, survival is more erratic and the evidence they contain is more impressionistic and much less comprehensive in geographical and chronological terms than the Port Book record. For these reasons, it has not been possible to reconstruct every merchant community in the region. However, it is hoped that through such sources, a more perceptive analysis of the systems that underpinned regional trade can be pursued.

i. Merchants, masters, and coasting in the Bristol Channel.

Port Books provide a broad canvas which serves to contextualise localised work on other sources. At a basic level such data supply, in Woodward's words, 'an index of merchants and an account of their trading activities'.[21] This fundamental form of analysis is presented in Tables 4.1 and 4.2 in which the total numbers of merchants

and masters trading between the main coastal ports are summarised. In this, the division between coastal export and import has been preserved because of the imbalance of the surviving records towards outwards shipments and also to avoid the charge of placing undue emphasis upon those ports for which data are more extensive. In the tables, data have been combined and exploded to take into account a number of possible variables. In particular, the identification of traders has been facilitated by using a standardised surname programme, built into the databases, which operates as a concealed computerised look-up table. This has enabled the compression of information relating to surnames where local practice and often phonetic transcriptions have created many variant spellings.[22] In so doing, the data structure has not been altered nor has the record been compromised by adopting a too rigid or inflexible standard that could not be amended in the light of subsequent research.[23]

Despite such safeguards, there are methodological problems concerned with counting traders. For example, multiple occurrences of persons of the same fore- and surnames are not easily disaggregated. Dynasties of merchants and boatmen often operated concurrently and the distinction between senior and junior is only erratically preserved in the Port Book record. Where explicit reference is made, as in the cases of James Harrison senior and junior, who traded on Tewkesbury and occasionally Evesham boats, or William Williams senior and junior of Cardiff, the figures have been amended accordingly.[24] Similarly, the frequency of common regional surnames can cause difficulty. Jones, John and Evans are widespread; in 1699 seven combinations of 'Evans' and nine of 'John' with apparently discrete Christian names are recorded as merchants at Cardigan. The problem is compounded where distinctions cannot be made on the grounds of contrasting forenames.[25] However, potential areas of confusion have been avoided by the rigorous examination of the trading patterns of individual operators. Merchants and masters have been studied in combination with details of the boats they operated, dates of coquets or letpasses, ports of clearance and destination, and 'typical' cargoes in order to establish valid distinctions.

Table 4.1: Merchants recorded exporting goods coastally, sample year.

	Total Voyages	Merchants	Unknown	Merchants >3 Voyages	% regular merchants	Voyages per Merchant
St.Ives	43	6	-	2	33	7.17
Gloucester	332	52	1	29	56	6.38
Cardiff	31	6	-	3	50	5.17
Bristol	491	196	30	38	20	2.51
Ilfracombe	46	22	-	5	23	2.09
Milford	452	256	14	43	17	1.77
Minehead	127	73	-	12	16	1.74
Bridgwater	95	55	1	8	15	1.73
Padstow	28	17	2	3	18	1.65
Carmarthen	29	20	1	3	10	1.45
Bideford	72	50	4	4	8	1.44
Mount's Bay	4	4	-	-	-	1.00
Barnstaple	54	20	26	1	-	-
Tenby	176	-	176	-	-	-
Llanelli	81	-	81	-	-	-
Swansea	531	2	529	-	-	-
Neath	437	-	437	-	-	-
South Burry	13	-	13	-	-	-
Chepstow	345	8	337	-	-	-
Cardigan	96	65	1	7	11	1.48
Liverpool	306	151	2	21	14	2.03

Masters recorded exporting goods coastally, sample year.

	Total Voyages	Masters	Unknown	Masters >3 Voyages	% regular masters	Voyages per Master
Chepstow	345	54	1	22	41	6.39
Gloucester	332	59	1	32	54	5.63
Cardiff	31	6	-	3	50	5.17
Bristol	491	194	-	40	21	2.53
Tenby	176	76	2	27	36	2.32
Neath	437	210	1	43	20	2.08
Minehead	127	63	8	13	21	2.02
Bridgwater	95	50	1	10	20	1.90
St.Ives	43	24	1	4	17	1.79
Milford	452	252	14	41	16	1.79
Swansea	531	312	2	54	17	1.70
Barnstaple	54	33	-	6	18	1.64
Ilfracombe	46	29	-	3	10	1.59
Padstow	29	19	-	3	16	1.53
Llanelli	81	56	1	7	13	1.45
Bideford	72	51	3	4	4	1.41
Carmarthen	29	21	-	2	7	1.38
South Burry	13	13	-	0	-	1.00
Mount's Bay	4	4	-	-	-	1.00
Cardigan	96	70	2	3	4	1.37
Liverpool	306	207	2	18	9	1.48

Table 4.2: Numbers of merchants recorded importing goods coastally, sample year

	Total Voyages	Merchants	Unknown	Merchants >3 voyages	% regular merchants	Voyages per merchant
Minehead	349	96	-	38	40	3.64
Bridgwater	331	92	-	33	36	3.60
Gloucester	294	84	-	25	32	3.50
Barnstaple	266	81	119	18	22	3.28
Ilfracombe	129	56	1	14	25	2.30
Bideford	225	108	13	26	24	2.08
Padstow	129	80	-	15	19	1.61
St. Ives	51	33	7	3	9	1.55
Carmarthen	44	32	3	2	6	1.38
Milford	54	43	2	1	2	1.26
Mount's Bay	13	12	-	-	-	1.08
Tenby	10	-	-	-	-	-
Chepstow	65	-	-	-	-	-
Cardigan	14	12	2	-	-	1.17
Liverpool	203	150	1	13	9	1.35

Numbers of masters recorded importing goods coastally, sample year

	Total Voyages	Masters	Unknown	Masters >3 voyages	% regular masters	Voyages per master
Gloucester	294	68	1	25	37	4.32
Bridgwater	331	83	-	32	39	3.99
Minehead	349	90	-	36	40	3.88
Barnstaple	266	112	5	31	28	2.38
Ilfracombe	129	61	1	13	21	2.11
Bideford	225	108	13	24	22	2.08
Padstow	129	77	-	17	22	1.68
Tenby	10	6	1	1	17	1.67
St. Ives	51	32	6	4	13	1.59
Chepstow	65	42	-	3	7	1.55
Carmarthen	44	33	2	2	6	1.33
Milford	54	45	2	1	2	1.20
Mount's Bay	13	12	-	0	-	1.08
Cardigan	14	12	2	0	-	1.17
Liverpool	203	140	17	9	6	1.45

Tables 4.1 and 4.2 are designed to describe *activity*, not *residence*. The index number expressed in column seven, therefore, denotes the frequency with which recorded traders operated. There has been no attempt to associate merchants with specific ports. In particular, the 'of' port descriptor as applied to boats has not been interpreted as conferring a residential status upon the merchant. Similarly, no link has been made between the frequency of trade and a merchant's operational base. Clearly, a master or merchant recorded shipping goods between coastal ports could be associated with both, one, or neither of the centres. For example, Henry Herle, a tin merchant of Truro, occurs shipping goods to and from Padstow in 1697.[26] Similarly, William Alloway, a merchant of Bridgwater, traded through Watchet, Minehead and Ilfracombe, being recorded not only in the Minehead, Bridgwater and Ilfracombe Port Books, but also in the records of the ports with which he regularly traded: Gloucester; Bristol and Liverpool.[27] This multiple presence is registered in the figures for all six ports: although Alloway remained consistently associated with the trade of Somerset, no comparative weight has been attached to an implied 'home' base.

Two further devices have been employed to categorise the role of regional merchants and masters. Firstly, the number of traders is expressed in terms of the total number of voyages clearing or entering the port. Through this a comparative hierarchy of mercantile activity has been constructed. The fifth column tabulates the numbers of merchants and masters associated with each port and recorded on three or more separate voyages, thus providing a functional index of regular operatives, and allowing the core patterns of coasting distinctive to each port to be assessed. The highly atypical merchant, for example Sir Edward Mansell who shipped a single cargo of household goods and lumber from London to Milford in 1699, is, therefore, numerically separated from the more regular traders from Liverpool, Bristol and the south-west.[28] Merchants could and did charter numerous vessels, as well as occasionally freighting goods as part of mixed consignments under the commercial hegemony of other merchants. The index of 'regular' merchants may thus be an underestimate of mercantile activity. None the less, these figures represent

participation every four months in the coastal trade and imply a fairly substantial interest in the trade of the locality. Masters were also generally attached to one vessel. In such cases, it is clear that being recorded on a regular basis, either clearing or entering a port, usually meant that a reciprocal voyage had been made. Thus, a 'regular' master may have been involved in many more than three discrete voyages. The number of 'regular' traders, presented as a percentage of total recorded number of operatives per port, also gives an insight into whether commerce was focused upon a core body of shippers, or, as Willan has suggested, spread thin amongst a large number of merchants and masters who operated a haphazard and unspecialised trade involving a multitude of boats which made few journeys per year.[29]

Undoubtedly, the roles of master and merchant represented quite different facets of the coasting trade. However, the Port Books reveal a remarkably high relation of masters acting, at least on paper, as merchants to their vessels. This was especially true in the coal trade of south Wales. Here capital outlay was small and likely to represent appreciably less of a financial risk for a ship's master than a cargo of high-value goods from Bristol or a large quantity of excisable goods such as copper ore, tin, or salt. The Barnstaple coal warden's accounts reveal cargoes purchased directly from ship's masters, although evidence suggests that master-merchants also carried coal for large mercantile concerns.[30] Likewise, coal was one item which Shropshire boat operators purchased in large amounts on credit from colliery owners or landowners.[31] Such trowmen invariably appeared in the Gloucester Port Books as master-merchants. In these cases it is fair to assume that operation of boat and ownership of cargo were effectively combined: the trowmen were both masters and merchants in a very real sense. Similarly, it has been implied that where only a single commodity was shipped, the recorded merchant, even if he mastered the vessel, must have had a considerable stake in the cargo. For much of the petty trades of the south-west - coal, hilling stones, and earthenware, for example - this may have been the case. However, with high value single item cargoes - salt is the best example - the nature of the good ruled against simple master-merchant ownership. From a slightly

different perspective, high-value goods were often traded in multiple cargoes mastered by traders acting ostensibly as the merchant to the entire shipment. It is highly unlikely that such masters owned anything more than a small share of the cargo.

The position is further complicated by the omission of merchants from many Port Book entries. This was common practice for the ports under the control of Swansea and Neath and by the early eighteenth century had been adopted at Chepstow, Tenby, Llanelli, and, more erratically, Barnstaple and Bideford. The implication is that the master invariably acted as merchant in the kind of petty relationship described by Westerfield, Willan and Nef. Yet, however much this is borne out in the entries of other Port Books, it does reveal a creeping vacillation in the process of record. The Tables have maintained this distinction with high numbers recorded as 'unknown' for the ports mentioned above. No calculations as to the number of voyages per merchant or the regularity of mercantile activity have been made in these cases and the reader is directed to the figures for masters to gain an impression of the organisation of trade. In other cases, Bristol and Bideford for instance, the relatively high proportion of 'unknown' merchants, 6% and 19% of recorded merchants respectively, is less due to this kind of slack compilation than to illegible, or obliterated information in the Port Books themselves.

A further refinement has been adopted in Table 4.3. A distinction has been drawn between those merchants who accompanied their vessels as masters, 'merchant seamen' to use Willan's rather inappropriate phrase, and 'men who were purely merchants and left the actual transport of goods to others'.[32] These 'pure' or 'independent' merchants have been expressed as a percentage of the total number of merchants isolated in the outwards and inwards sections of each port's respective coastal Books. Despite the uneven coverage and the omission of key data from certain Port Books, a comprehensive account of independent merchant activity is provided for roughly two-thirds of the sample. This index is based solely upon the port: a 'pure' merchant at one centre could quite feasibly be a master-merchant elsewhere, although

examination of the figures for the sample year has failed to provide positive evidence of such occurrences.[33] Most importantly, the Table includes additional merchants normally associated with supplementary wool coquets, or very occasionally with goods moved by letpass, transire, sufferance and warrant in addition to the main coquet cargo.[34]

In order to assess the importance of 'pure' merchants in regional commerce, and to analyse whether distance or specialised trades affected the record, the seventh column of Table 4.3 expresses the number of such traders who were involved in long-distance coastal trade. For the ports of the Bristol Channel, this has been defined by trade conducted with centres beyond the parameters of the region. Trade would thus be less 'long' to peripheral centres like Milford and Mount's Bay than, for example, Bristol or Swansea. In the case of Gloucester, trade was dominated by the physical restrictions to commerce imposed by both the navigational capacities of river craft and the dominance of the link with Bristol. Here a distinction has been made between local, above-Holms trade (trade within the Severn estuary comprising dealings with Bristol, Chepstow and Cardiff and its creeks Newport and Caerleon) and 'long distance' trade to and from the ports of the wider Bristol Channel proper.[35] In the case of Liverpool, all trade beyond the port's core hinterland of the north-west and north Wales (comprising the coastline from Whitehaven to Aberdovey) has been deemed 'long distance'. The three Tables reveal much about merchant activity in the region. At a basic level, the numbers of merchants and masters are shown to be fairly consistent, with high numbers of traders being recorded at each port. This is largely due to the prevalence of 'merchant-master' combinations, the dispersal of trade amongst a wide sector of traders, many of whom may have only made one or two voyages in a single year, and, conversely, the fact that at some ports trade was concentrated in the hands of a distinctive merchant class. In the case of coastal exports, only Gloucester, St. Ives and Cardiff show evidence of concentrated mercantile activity, with an average of over 5 voyages per merchant recorded. At St. Ives this resulted from the control exerted by Edward Crofts.[36] Crofts, an owner of

Table 4.3: Numbers of 'independent' merchants exporting goods coastally, sample year.

	Total Voyages	Total Mers	Total Masters	Independent Mers	Wool Mers	Long-Dist. Mers	% ind. Mers
St. Ives	43	6	24	6	0	2	100
Ilfracombe	46	22	29	15	0	4	68
Minehead	127	73	63	34	2	1	47
Mount's Bay	4	4	4	1	0	1	25
Bridgwater	95	55	50	10	0	4	18
Bideford	72	50	51	6	0	4	12
Gloucester	332	52	59	6	3	1	12
Padstow	28	17	19	1	0	1	6
Carmarthen	29	20	21	1	0	0	5
Bristol	491	196	194	6	2	0	3
Milford	452	256	252	6	0	4	2
Cardiff	31	6	6	0	0	0	0
Liverpool	306	151	207	126	0	68	83

Numbers of 'independent' merchants importing goods coastally, sample year.

	Total Voyages	Total Mers	Total Masters	Independent Mers	Wool Mers	Long-Dist Mers	% ind. Mers
Gloucester	294	84	68	24	5	6	29
Bridgwater	331	92	83	23	3	9	25
Carmarthen	44	32	33	8	0	6	25
Ilfracombe	129	56	61	12	0	8	21
Milford	54	43	45	9	0	5	21
Minehead	349	96	90	18	5	6	19
St. Ives	51	33	32	5	0	4	15
Bideford	225	108	108	12	0	9	11
Padstow	129	80	77	7	0	3	9
Mount's Bay	13	12	12	1	0	1	8
Liverpool	203	150	140	98	0	67	65

copper and tin mines in his own right, was involved in 34 of the 43 voyages that cleared St. Ives in the sample year, acting as merchant on boats nominally 'of' Bristol, Bridgwater, Britton Ferry, Dartmouth, Oystermouth, Neath, St. Ives, and Swansea. These boats carried mainly copper ore, copper and tin to Chepstow and Liverpool. Crofts was clearly freighting masters. For example, each master clearing St. Ives was involved on average in only 1.79 voyages, a figure which suggests a large number of small independent boatmen. In contrast, Crofts was not involved in a single inwards shipment in the sample year, where the numbers of merchants and masters reverts to the pattern of dual function associated with the staple coal, salt, and Bristol trades.[37] The masters Crofts freighted outwards returned either in ballast, with goods for other merchants, or on their own account. This is further clarified in Table 4.3. Every merchant involved in coastal clearances from St. Ives can be classed as an 'independent' or 'pure' merchant in that they were not involved in the physical shipment of goods. In the case of coastal imports, less than a seventh of all merchants recorded acted independently: a pattern more generally common to the trade throughout the south-west.

The concentration of trade at Cardiff under 6 merchants reveals both the poverty of the record - only 31 voyages cleared the port in the sample year - and the importance of one trader, William Williams, who acted as master and merchant for 18 voyages and 5 wool coquets. The Cardiff trade, aimed entirely at supplying Bristol, was operated solely by merchants who mastered the vessels. In comparison, trade through Gloucester was conducted on a much wider scale being focused largely upon merchant-masters from the major river ports of the Severn and the Warwickshire Avon. Using the criteria of three voyages as an index of regularity, only Gloucester demonstrated high numbers of established and recurrent traders, with over half of all masters and merchants involved in trading on a regular basis. Clearly, this pattern resulted from the diversity of the Severn hinterland and, unlike the wider region, the number of centres trading through the head port. Thus, at Shrewsbury trade was dominated by John Jones (18 voyages in 1699); at Bewdley by Francis and George

Perkes (30 voyages) and John Beale (18 voyages); at Worcester by William Perkes (33 voyages), John Chance (24 voyages), and Peter Noxon (21 voyages); at Tewkesbury by William Fisher (18 voyages); and at Gloucester by William Bailey (21 voyages) and Richard Lewis (18 voyages). These Port Book merchants generally acted as masters, although a minority, like Francis Perkes, freighted others in addition to mastering their own trows. Only 6 'independent' merchants were recorded on shipments clearing Gloucester, 3 of whom were wool merchants associated with separate coquets.

Generally, the activity of merchants in the outwards trade of the region was limited. Table 4.1 reveals that only at Bristol and Ilfracombe was the number of 'regular' merchants greater than a fifth of the total number of traders recorded. However, the figures are slightly more demonstrative with regard to masters. It is clear that masters were intimately associated with particular vessels. This suggests strongly that they either owned the craft outright, or perhaps more commonly possessed a share of the vessel. Alternatively, they might have been employed by a boat owner as the senior operative on a long term basis.

No merchants are recorded in the Chepstow Books, which itself suggests that the master exercised an effective mercantile role for Customs purposes. However, the number of masters gives an insight into the operation of the Wye trades. Like Gloucester, trade was concentrated in the hands of a smaller number of traders, a high proportion of whom carried goods on a regular basis. On average every master recorded clearing Chepstow skippered over 6 voyages in 1699. 41% of these masters operated a regular service trading on three or more separate occasions. As with Gloucester, Chepstow served a number of prominent up-river nodes. Dynasties of master-owners, like the Lewises of Brockweir responsible for 56 voyages, and the Cutts of Redbrook and Brockweir (30 voyages), were pivotal in coastal exports. Similarly George Mann and John Wheeler, who mastered 31 and 35 voyages on Chepstow boats respectively, and John Gosling of Chepstow, who mastered 49 shipments, figured strongly in the outward trades. However, it would be a mistake to

attribute dual status to all such traders. The longer series of Gloucester Port Books which do record the names of merchants trading with Chepstow, reveals that boats were occasionally chartered by independent merchants and industrialists. For example, the copper producer John Coster of Redbrook was responsible for 63 tons of copper and 151 bundles and half a ton of wire and wire ends amongst other goods sent to Gloucester in 1699.[38] Similarly, of the nine voyages on which John Hanbury of Pontypool appeared as merchant, seven were undertaken by various Redbrook boats mastered by John Cutt, though Cutt may have had a stake in the more miscellaneous items of cargo.[39]

The Tables reveal another important distinction: the trade of Cardiff, Chepstow and Gloucester was conducted through a core of masters who operated regular, almost 'packet-like' services to the regional metropolis. Elsewhere, only masters operating out of Bristol, Tenby, Neath and Minehead were involved in more than two voyages each, whilst regular masters occupied over a fifth of recorded traders only at these ports and Bridgwater. Significantly, trade at the south-Wales ports from Neath westwards was widely dispersed amongst a large section of merchant-masters. Milford recorded the highest number of traders most of whom figured in only one shipment, a result of the activity of traders from more far-flung coastal centres. A similar pattern occurred at Swansea, although trade at Tenby and Neath was more in the hands of 'regular' Bristol Channel operatives.

These representations of merchant and master activity emphasise that the common experience for most coastal centres was that trade remained geographically widespread yet distributed amongst a fairly large class of essentially small operators. This can be partly explained by the prominence of dual functions with the shipper invariably acting as merchant. However, a more distinctive picture can be gained if Table 4.1 is compared with Table 4.3. The complete separation of merchant and master at St. Ives has already been stressed, which may imply that recording practice at the port was especially stringent or that the recorded cargoes, mostly of high grade copper ore and tin, were too important and too expensive to be handled by petty

master-merchant operations. Similarly, at Ilfracombe the imbalance between merchant and master is revealed both in the frequency of traders and the number of independent merchants recorded. Here trade consisted almost wholly of herrings exported by letpass. This seems to have encouraged a distinct bloc of merchants. Whilst 23% of all merchants exporting goods from Ilfracombe were 'regular' traders, only 10% of masters satisfied the criterion. What is more, only 7 out of the 22 merchants identified also doubled as masters of vessels: the trade was firmly in the hands of men like William Alloway of Bridgwater and Anthony Juliot of Bideford,[40] and more elusive local merchants such as Philip Askey, William Bowen, and Robert Francis.

Of the major ports, only Minehead had a significant proportion of independent merchants. Most were either notable local merchants with established regional interests, like John Baston or Joseph Alloway,[41] or wool merchants, such as John Cleveland who was shipping Irish combing wool to Gloucester, and large quantities of Midlands wool in return.[42] More peripheral merchants, like Andrew Hare and Edward Rogers, combined coastal trade with the overland distribution of goods initially imported from overseas. In 1699-1700, Hare was involved in five clearances, all for small items covered by letpass or transire.[43] Rogers, on the other hand, acted as merchant on seven occasions, freighting a letpass shipment from London and shipping an assortment of overseas goods in voyages to Bridgwater, Bristol and Gloucester. In between times, Rogers was recorded as merchant to three consignments passing by land carriage to Exeter.[44]

However, the figures for Bristol demonstrate that coastal trade was dominated by merchant/masters whilst regular traders and individual merchants were rare. In 1699, the Bristol Port Books recorded only 6 'independent' merchants, two of whom (John Hudson and Richard Jefferies) were associated solely with wool coquets.[45] It would appear that Bristol's trade was effectively controlled by boat operators and traders based largely in the region. This would seem to confirm the late Professor McGrath's assertion that from 'the impression of the Port Books [the coastal trade] was

to a considerable extent in the hands of men who were not, strictly speaking, merchants'.[46] By his own admission, the classification of who was and who was not a merchant may be too prescriptive. Underneath an 'official' merchant class, 'those who became free as merchants or who were classified as merchants as contemporaries' and abstained from retail, existed an ambiguous collection of traders who were involved in both the overseas and internal trade of Bristol.[47] Even so, despite the existence of a strong, autonomous and expanding trading community in the city, only Edward Hackett can be firmly identified in the Bristol coastal Port Books as a Bristol merchant. Though locally important, Hackett could not be described as part of the mercantile elite.[48] The absence of Bristol men may be a peculiarity of the chronological sample or the fact that the Bristol Port Books register outwards voyages only. We know from other Port Books that substantial Bristol merchants, Sir Abraham Elton for example, were occasionally recorded on shipments destined for the city.[49]

Thus, if Bristol can be seen to dominate regional trade in terms of volume and value of cargo, why was a vigorous base of Bristol merchants not as apparent in the coastal trade as it was in overseas commerce? Firstly, the notion that Bristol merchants were solely associated with the overseas trades leaving the unseemly business of internal distribution to grubby shopkeepers and wholesale tradesmen, whilst persuasive, must be discounted. It would be unlikely that the principal merchants of Bristol would have left such an important and profitable market wholly to a lesser class of trader, even if the Port Book record alone does not explicitly recognise their involvement in the physical process of coasting. Yet, the similarity between the numbers of merchants and masters recorded at Bristol suggests that very few coastal exports were merchanted by an explicit and identifiable merchant class. The local 'shuttle', as it were, dominated Bristol's trade. This took the form of the voyages of the master-merchants of the Severn and Wye, and the cyclical monthly or quarterly shipments to and from the other ports of the region. Here lies the key to the coastal trade of Bristol. On one hand, the marked diversity of trade at Bristol tended

to discourage any concentration of mercantile activity: Bristol traded widely to areas served perhaps by a solitary shipment per year. In addition, geographical diversity was mirrored in the highly miscellaneous nature of Bristol cargoes: the sheer number of regional merchants owning cargo items may have promoted the recording of the master- merchant as a more convenient Customs device.

The triangle of enclosed water above the Holms and its associated river systems was the core operational area for Bristol's coasting trade: throughout the period, over three-fifths of outward shipments were to ports in this area. What is more, despite the problems of entering the Bristol Avon, it represented a zone of 'safe' shipping. This was true not only from the perspective of the merchant for whom cargo security was a recurrent problem in areas of open sea, but also from that of the Customs. The more controlled trading atmosphere was conditioned by the short-haul nature of the river-bound trows and barges. These were probably incapable of making a swift, illicit voyage abroad. Likewise, masters of such vessels were unlikely to adulterate or disguise goods shipped such short distances. In addition, the centralisation of trade upon a relatively small and recognisable band of major coastal traders at Gloucester, Chepstow and Cardiff may have encouraged familiarity and even complacency amongst Customs officials.

This is in direct contrast to the organisation of coastal shipping at Liverpool. Here the independent merchant predominated and master-merchants, whether operating from the Mersey estuary or elsewhere, accounted for less than 17% of the total number of recorded traders. The significance of independent merchants was primarily due to the presence of substantial salt proprietors like Thomas Johnson of Liverpool and Nantwich, or John Cleveland 'merchant and proprietor of Liverpool', and cheese merchants, like George Harvey, who exploited the lucrative London trade.[50] Even though the records of inwards trade reveal more master- merchant combinations, the independent 'land-based' merchant represented almost two-thirds of merchants recorded in the Liverpool Books. The majority of these 'fixed' merchants were also those that engaged in 'long-distance' coasting in that they regularly traded

beyond the local hinterland of the port. Some 54% of merchants shipping goods from Liverpool and 68% of those receiving or organising inwards shipments dealt with ports considerably removed from the north- west of England. Thus, unlike Liverpool, where long-distance coasting was prevalent and where validated coquets and certificates might take months to be returned, the enclosed above-Holms area perhaps did not need the extra security provided by recording independent merchants; the master-merchant formula was sufficient.

As Chapter 3 indicated, many shipments from Bristol were high-cost, high-value assemblages of miscellaneous overseas and domestic produce. Many of these cargoes must have been constructed at the behest of provincial merchants who would venture goods that would meet a ready local market. This depended upon the availability of goods, the prospects of selling them, the ability to obtain advance credit in Bristol and elsewhere, and whether the master or merchant of a vessel had the financial wherewithal or the orders to trade on his own account. Surviving account books suggest that the more substantial coastal masters, particularly those who had a direct stake in their craft, often engaged in opportunistic trade. For example, in April 1697, whilst waiting for Hoare and Company's salt to be unloaded at Plymouth, John Neale, master and part-owner of the *Providence* of Bridgwater, was approached by a local merchant to take a cargo of serge to London. This he was willing to do only if the Company would 'consider a freight back againe or elce it will not be worth our going there'.[51] Failure of the Company to respond in time cost Neale his freight, and the *Providence* completed the final home leg of the hazardous and unprofitable trip in ballast. Such commercial decisions were dependent upon individual traders and coasting concerns. With Bristol the regularity of return voyages and the rather confined site may have militated against this kind of activity.

Merchanting often depended upon other, more contingent factors. A master unloading goods at Bristol might procure a return freight or part-freight from Bristol merchants if this was available and the commission was attractive. Alternatively, a master may have been contracted to deliver a specific cargo. For example, in May

1697 Richard Tuthill of Bristol was responsible for conveying to Bridgwater a load of hemp and pitch received overland from London for Hoare and Company of Bridgwater.[52] He was, however, able to transport only 6 of the 17 bundles of hemp in his charge on board the regular Bridgwater coaster, the *Satisfaction* of Bridgwater, mastered by Edward Davis. Tuthill 'could not perswade Ed. Davis to carry any more nor take in any of the pitch alledging that he [Davis] was forced to take in goods for Exon & Wellington fair'. Even so, Tuthill hoped to charter Davis for the remainder of the cargo after the *Satisfaction* returned from Bridgwater or else to dispatch the remainder by the next available coaster.[53] The Bridgwater coastal Books of 1697 show that Davis left Bridgwater for Bristol on 29 April 1697 with a miscellaneous letpass cargo. By the 22 May the *Satisfaction* was back in Bridgwater carrying a mixed cargo of overseas and domestic goods, including Hoare's hemp.[54] However, neither Tuthill nor Hoare and Company are identified as merchants in the Port Book record, the cargo progressing under Davis as master and merchant. Although, the *Satisfaction* cleared Bridgwater on 26 May with a freight of agricultural goods and wood for Bristol, the vessel did not reoccur until 1698. It may have cleared in ballast or have cleared for another coastal or overseas port, in which case the remaining hemp and pitch was most probably conveyed in one of the regular Bridgwater carriers. Davis spent the summer months shipping culm and wool from Tenby on the *Two Sisters* of Bridgwater.

The experience of Tuthill indicates the presence of an amorphous body of traders omitted from the Port Books. Tuthill was by no means a major merchant and, without the testimony of Hoare and Company's letters, his role as factor would not have been recognised. This raises important interpretational problems: was Tuthill representative of a wider section of 'latent' Bristol-based coastal merchants that for reasons of record compilation or convenience were omitted from the Port Book record? Perhaps more tellingly we should ask that if Tuthill was involved in coasting, to what extent did the high profile merchants of the city control his actions. Were the 'real merchants' isolated by McGrath and Minchinton in effect behind the coastal

shipments emanating from Bristol? Like McGrath, we have to lament the absence of letter books and personal accounts for this period which may have confirmed the involvement of such merchants in internal trade.[55]

None the less, the Port Books throw an important though oblique light upon some of their activities. In particular, major Bristol merchants were mentioned in relation to items of overseas cargo imported at Bristol for which they were initially responsible for securing Customs duties. When these commodities were subsequently moved coastally certificates verifying legal import (and legal importers) were recorded in some coastal Books. For example, the Minehead Port Books record 49 additional merchants associated with goods shipped from Bristol to Minehead between Midsummer 1699 and Midsummer 1700. These merchants were associated with 87 separate cargo consignments with tobacco and Iberian wine the most frequently specified commodities. The extent and character of this activity is summarised in Table 4.4. Merchants are organised by the number of voyages on which commodities bearing specific details of overseas importation are recorded. Further columns indicate the whether freedom of the Society of Merchant Venturers of Bristol was attained,[56] and the amount of tobacco, wine and other commodities listed in the Port Books.[57] Because merchants were concerned jointly with individual consignments - Blackwell, Daines, Martindale, Mason, Scandrett and Serjeant, for example, were involved collectively in a cargo of 8,661 lbs of tobacco - no attempt has been made to provide cumulative totals of commodities traded.

The Table reveals a cross-section of the most important merchants involved in the trade of Bristol. Men like Thomas Richardson and Joseph Earle dealt largely in Spanish, Port and Alicant wines whilst Sir William Daines and Edward Martindale were important tobacco shippers. These merchants, unlike Tuthill, were men of the highest rank maintaining powerful connections with the urban and mercantile hierarchy of Bristol. Nineteen had firm links with the Society of Merchant Venturers, often, as in the case of Daines, John Day, Abraham Elton, Abraham Hooke, Joseph Jeffries, Charles Jones senior, Francis Rogers and Thomas Scrope rising to high

Table 4.4: Additional Bristol merchants recorded at Minehead, sample year.

Merchant	Frequency	SMV member	Tobacco (lbs)	Wine (gal)	Other
Thomas Richardson	7	1672	-	1228	-
Sir William Daines	5	1690	21662	8	-
Cornelius Serjeant	5	-	18791	-	-
John Blackwell	4	1697	-	273	-
Edward Lloyd	4	-	-	122	-
Nicholas Lott	4	-	7952	-	-
Arthur Hart	3	1668	-	252	-
Edward Martindale	3	-	11219	-	-
George Mason	3	1690	13307	-	-
Richard Bayley	2	-	-	-	70 gal oil
Robert Bodenham	2	-	-	-	87 cwt tallow
Aubery Buckler	2	-	3240	-	-
John Day	2	1695/1698	-	-	15 cwt Sp. iron
Jospeh Earle	2	1697	-	1020	-
James Hollidge	2	1690	600	-	6 cwt tallow
Charles Jones	2	1688	2442	-	-
James Peters	2	-	2228	-	-
Christopher Scandrett	2	-	1543	-	-
John Anthony	1	-	2750	-	-
Thomas Anthony	1	-	450	-	-
Stephen Baker	1	-	-	-	57 cwt tallow
Joseph Baugh	1	-	-	-	405 bsh Sp. salt
Henry Bradley	1	-	97	-	-
Alexander Doleman	1	-	-	-	200 ell canvas
John Donning	1	1695	-	-	55 Bsh white salt
Sir John Duddleston	1	1691	2252	-	-
Abraham Elton	1	1690/1700	-	-	68.75 cwt tallow
Richard Franklyn	1	1692	3778	-	-
Edward Hackett	1	?1691	2146	-	-
Charles Harford	1	ref. 1711	539	-	-
Charles Haydon	1	-	2128	-	-
Henry Hayman	1	-	5043	-	-
Abraham Hooke	1	1691	1050	-	-
Joseph Jefferies	1	?warden 1745	-	-	20 cwt tallow
John Jones	1	-	2252	-	-
Thomas Lewis	1	-	-	-	1 pack paper
Edmund Mountjoy	1	-	200	-	-
John Mylam	1	-	1543	-	-
John Plaister	1	-	2750	-	-
John Prevoe	1	-	-	2268	-
Francis Rogers	1	1695	-	-	1 ton lignum vita
Thomas Scrope	1	1663	-	24	-
James Stevens	1	-	1690	-	-
Samuel Stokes	1	-	240	-	-
Bryan Tandy	1	-	264	-	-
Henry Watts	1	1695	1000	-	-
Thomas Whittuck	1	-	3112	-	-
Aaron Williams	1	-	450	-	-
Peter Young	1	-	597	-	-
Total Occurrences	85				
Total Merchants	49				

office. In addition, Daines, Hart, Day, Elton, Jeffries as well as James Hollidge and Edmund Mountjoy served as Mayors of the city, with Daines, Joseph Earle and Elton becoming MPs for the borough later in the eighteenth century.[58] Others, like Charles Harford, James Peters and Edward Lloyd, were important Quaker merchants. In 1700, Harford and Lloyd were associated with Hollidge, Jones and others in a prospective brass making enterprise; Lloyd probably bankrolled Darby's brass works at Baptist Mills in Bristol; and Peters was to enter into partnership with Darby at Coalbrookdale in 1709.[59] Martindale and Edward Hackett were also clearly significant traders in their own right, even though they appear to have remained formally unconnected with the Merchant Venturers.[60] Lesser merchants, like Stephen Baker of Bristol, who operated mainly in the coastal trade are also represented,[61] as are a rather smaller number of other trades: Scandrett was a grocer and Doleman a mercer.[62] In contrast, merchants from other areas, such as John Prevoe, associated with Spanish wine traded from London, occur much less commonly.

The Minehead Port Books, although not unique, provide far more detail than the records for other ports. The inclusion of such data appears to be a device to ratify that overseas goods imported elsewhere and thence shipped coastally had paid the requisite Customs dues. It is, however, questionable whether these traders operated as a hidden class of coastal merchants. On paper there remains only a most tenuous link between the Bristol merchants of Table 4.4 and the coastal cargoes offloading at Minehead. We know that they were responsible for Customs duties, and we can infer from this that they owned a substantial part of these cargoes when initially imported, but without explicit corroborative evidence one cannot imply full mercantile control over coastal consignments. None the less, the merchant accounts and papers that do survive for this period suggest that the 'real' merchants of Bristol, to use McGrath's distinction, were often involved in trading coastwise goods imported from abroad. For example, Charles Jones junior of Bristol was responsible for trading 40 barrels of pitch and tar on his own account to William Alloway of Bridgwater on board the *Satisfaction* of Bridgwater in 1696. The vessel was directed by its regular master,

Edward Davis, who appeared in both the Bristol and Bridgwater Port Books as merchant for a diverse cargo which included Jones's goods.[63] Similarly, in the early eighteenth century, Graffin Prankard of Bristol was re-trading overseas goods to local customers via regular trows and vessels carrying mixed cargoes. Prankard also appears not to have been generally recorded as merchant, although he was frequently associated with cargoes of Droitwich salt.[64]

With regard to inwards trades, the absence of a complete series of data prevents the construction of a full sample. Although, data gleaned from other Port Books affords a measure of reconstruction possible, the process is unwieldy and cannot tackle the problems of erratic compilation or poor extancy. Even so, the Tables reveal two principal characteristics of coastal organisation. Firstly, the concentration of the coal trade in the hands of a small body of local shippers is reflected in the high ranking of the ports of the south-west. This ascendancy is stratified: the market and distribution centres of Somerset (Bridgwater and Minehead) display a conspicuously higher position in terms of voyages per trader and number of regular traders than do those of north Devon (Bideford, Barnstaple and Ilfracombe) which in turn rank higher than the Cornish ports. This is not, however, a corollary of the numbers of voyages: the sample years for both Ilfracombe and Padstow reveal similar numbers of voyages, although Ilfracombe records fewer traders overall and consequently a far higher ratio of voyages per trader than Padstow. Secondly, the ports that depended most upon Bristol - Chepstow and Gloucester - display rather lower ratios of voyages per merchant inwards than that obtained in the outwards trade. None the less, the primacy of Severn masters in the hierarchy of coastal importers cannot be doubted. Masters recorded trading through Gloucester were responsible for over 4 shipments on average, compared to the 3.5 voyages undertaken by each separate merchant. At Chepstow, the large ratio of masters to voyages suggests that single voyages remained the operational standard, and that many boats must have returned empty or in ballast.

Table 4.3 provides an important extra dimension to these figures by focusing

attention upon independent merchants. The major ports show that such merchants formed between a fifth and a third of all recorded merchants. However, determining the nature of the trade undertaken by independent merchants is more problematic. Firstly, there is a marked contrast between the experience of coastal exporters and importers. With coastal clearances, independent merchants appear to have concentrated mainly upon short-haul, regional trade. Only in the case of the herring trade at Ilfracombe, earthenware and tobacco shipped from Bideford and return cargoes from Bridgwater to Liverpool did long-distance independent merchanting achieve much significance. However, the inwards trade is a different matter. The Table reveals that at no port did involvement in the long-distance trade inwards occupy less than a quarter of all independent merchants isolated from the sample. Representation is lowest at Gloucester, largely because of the physical strictures imposed upon vessels by the Severn navigation. Even so, a further six merchants, including Coster of Redbrook and Hanbury, the Pontypool ironmaster, were involved in voyages to Gloucester from Chepstow - a port removed from the usual axis of trade with Bristol.

Long-distance merchants were most common associated with the more irregular forms of documentation. Letpasses and transires were more likely to specify independent merchants and be granted for small parcels of goods coming from unusual ports of clearance from beyond the region. Indeed, for local customs clerks, all trade from London, the south-coast, and ports beyond Liverpool tended to require fuller details. As the most important commodity was salt, this may have proceeded from its status as an excisable good liable to drawbacks if further refined. What is more, the securing of all duties appears to have been the responsibility of the producer, with the result that they were often identified as merchants. This position is clarified by Thomas Warburton, owner of rock salt refineries at Frodsham. Writing from Chester in 1696, Warburton complains of the assumption held by Bridgwater importers that 'the King's duty lyes on the buyer to pay, I wish I found it so, I could sell 5 ton for one that I do now, but being obliged to secure or pay the duty to the King

has made me very cautious who I deale with'.[65] Consequently, Warburton appeared as merchant on two voyages carrying salt to Bridgwater in 1696. In both instances, the cargo was almost certainly owned and freighted by other merchants.[66] None the less, in such a climate of rigorous fiscal oversight, it was far less likely for boat masters to be able to organise and distribute large quantities of salt effectively.

In order to provide a level of comparison, the exercises tabulated above have been applied to the wider ten-year sample of ports. The results are presented in Tables 4.5 and 4.6. Although the figures presented are influenced by local contingencies and random occurrences that are difficult to isolate, the general pattern established in the findings for the sample year is confirmed. For example, merchants exporting goods coastwise at Bristol were consistently involved in around 2 to 2.5 voyages, and at Padstow between 1.25 (the highly aberrant record for 1703) and 1.64. At Bridgwater, despite peaks at the beginning and end of the sample, on average around 1.75 voyages per trader were recorded . The proportion of voyages to traders involved in the inward trade at the main coal-importing ports - Bridgwater, Bideford and Padstow - reveals a different pattern. Whilst the close association of merchant and master appears to be emphasised at these ports, there was much fluctuation in the numbers recorded from year to year. Bideford was the most consistent, with 1699 representing a peak in the activity of masters. However, the vagaries of record keeping mean that consistent datasets for coastal merchants at Bideford exist only for 1699 and, to a lesser extent, 1695. None the less, the bulk of the sample reveals a high degree of consistency. At Bridgwater, for example, the core number of traders remained generally constant throughout the sample and the exceptional increase in traders importing goods coastally in 1697 correlates directly with the proportional expansion in the overall level of recorded trade in the year.

The more settled peacetime conditions that existed between 1698 and 1701 seem to have encouraged coastal trade. Certainly, overseas trade recovered in this period.[67] At Gloucester, this period witnessed a greater concentration of trade, for, although voyages clearing the port remained relatively stable, rather fewer merchants

Table 4.5: Merchants per voyage outwards, 1695-1704.

		1695	1696	1697	1698	1699	1700	1701	1702	1703	1704
Bristol	Voy.	430	383	-	445	491	-	412	-	-	-
	Mer.	162	169	-	175	196	-	196	-	-	-
	Unknown	0	1	-	21	30	-	5	-	-	-
	Voy/Mer	2.65	2.27	-	2.54	2.51	-	2.10	-	-	-
Gloucester	Voy.	289	334	357	-	332	-	335	-	-	331
	Mer.	61	83	79	-	52	-	51	-	-	47
	Unknown	21	0	0	-	1	-	1	-	-	1
	Voy/Mer	4.74	4.02	4.52	-	6.38	-	6.57	-	-	7.04
Bridgwater	Voy.	55	56	55	55	95	-	73	-	70	-
	Mer.	23	30	31	38	55	-	44	-	33	-
	Unknown	0	1	0	0	1	-	0	-	0	-
	Voy/Mer	2.39	1.87	1.77	1.45	1.73	-	1.66	-	2.12	-
Bideford	Voy.	70	70	57	-	72	83	-	72	-	-
	Mer.	29	4	1	-	50	2	-	9	-	-
	Unknown	17	58	56	-	4	76	-	60	-	-
	Voy/Mer	-	-	-	-	-	-	-	-	-	-
Padstow	Voy.	19	29	28	-	-	-	-	-	5	-
	Mer.	14	20	17	-	-	-	-	-	4	-
	Unknown	0	0	2	-	-	-	-	-	0	-
	Voy/Mer	1.36	1.45	1.65	-	-	-	-	-	1.25	-

Masters per voyage outwards, 1695-1704.

		1695	1696	1697	1698	1699	1700	1701	1702	1703	1704
Bristol	Voy.	430	383	-	445	491	-	412	-	-	-
	Mast.	153	160	-	173	194	-	184	-	-	-
	Unknown	0	2	-	2	0	-	3	-	-	-
	Voy/Mast	2.81	2.39	-	2.57	2.53	-	2.24	-	-	-
Gloucester	Voy.	289	334	357	-	332	-	335	-	-	331
	Mast.	63	82	79	-	59	-	76	-	-	80
	Unknown	25	0	0	-	1	-	2	-	-	1
	Voy/Mast	4.59	4.07	4.52	-	5.63	-	4.41	-	-	4.14
Bridgwater	Voy.	55	56	55	55	95	-	73	-	70	-
	Mast.	25	33	28	36	50	-	41	-	31	-
	Unknown	0	1	0	0	1	-	0	-	0	-
	Voy/Mast	2.20	1.70	1.96	1.53	1.90	-	1.78	-	2.26	-
Bideford	Voy.	70	70	57	-	72	83	-	72	-	-
	Mast.	32	38	39	-	51	48	-	51	-	-
	Unknown	17	14	10	-	3	12	-	0	-	-
	Voy/Mast	2.19	1.84	1.46	-	1.41	1.73	-	1.41	-	-
Padstow	Voy.	19	29	28	-	-	-	-	-	5	-
	Mast.	14	19	19	-	-	-	-	-	4	-
	Unknown	0	0	2	-	-	-	-	-	0	-
	Voy/Mast	1.36	1.53	1.47	-	-	-	-	-	1.25	-
Tenby	Voy.	232	209	221	181	176	244	259	224	-	-
	Mast.	95	99	81	82	76	97	115	115	-	-
	Unknown	1	3	1	1	2	21	6	0	-	-
	Voy/Mast	2.44	2.11	2.73	2.21	2.32	2.52	2.25	1.95	-	-
Neath	Voy.	-	-	-	-	-	-	437	401	440	440
	Mast.	-	-	-	-	-	-	210	192	176	150
	Unknown	-	-	-	-	-	-	1	0	0	0
	Voy/Mast	-	-	-	-	-	-	2.08	2.09	2.50	2.93

Table 4.6: Merchants per voyage inwards, 1695-1704.

		1695	1696	1697	1698	1699	1700	1701	1702	1703	1704
Gloucester	Voy.	235	190	235	-	294	-	216	-	-	252
	Mer.	76	69	67	-	84	-	67	-	-	72
	Unknown	10	0	2	-	0	-	0	-	-	1
	Voy/Mer	3.09	2.75	3.51	-	3.50	-	3.22	-	-	3.50
Bridgwater	Voy.	382	282	442	321	331	-	345	-	360	-
	Mer.	86	90	125	78	92	-	97	-	88	-
	Unknown	6	2	1	0	0	-	1	-	0	-
	Voy/Mer	4.44	3.13	3.54	4.12	3.60	-	3.56	-	4.09	-
Bideford	Voy.	186	170	166	-	225	245	-	207	-	-
	Mer.	92	0	5	-	108	56	-	18	-	-
	Unknown	13	170	166	-	13	177	-	190	-	-
	Voy/Mer	-	-	-	-	-	-	-	-	-	-
Padstow	Voy.	95	117	129	-	-	-	-	-	129	-
	Mer.	60	60	80	-	-	-	-	-	56	-
	Unknown	4	2	0	-	-	-	-	-	3	-
	Voy/Mer	1.58	1.95	1.61	-	-	-	-	-	2.30	-

Masters per voyage inwards, 1695-1704.

		1695	1696	1697	1698	1699	1700	1701	1702	1703	1704
Gloucester	Voy.	235	190	235	-	294	-	216	-	-	252
	Mast.	63	65	67	-	68	-	59	-	-	73
	Unknown	8	0	3	-	1	-	0	-	-	1
	Voy/Mast	3.73	2.92	3.51	-	4.32	-	3.66	-	-	3.45
Bridgwater	Voy.	382	282	442	321	331	-	345	-	360	-
	Mast.	84	81	119	74	83	-	95	-	95	-
	Unknown	5	1	1	0	0	-	1	-	0	-
	Voy/Mast	4.55	3.48	3.71	4.34	3.99	-	3.63	-	3.79	-
Bideford	Voy.	186	170	166	-	225	245	-	207	-	-
	Mast.	94	96	96	-	108	125	-	112	-	-
	Unknown	0	0	0	-	13	3	-	0	-	-
	Voy/Mast	1.98	1.77	1.73	-	2.08	1.96	-	1.84	-	-
Padstow	Voy.	95	117	129	-	-	-	-	-	129	-
	Mast.	58	60	77	-	-	-	-	-	54	-
	Unknown	0	0	2	-	-	-	-	-	0	-
	Voy/Mast	1.64	1.95	1.68	-	-	-	-	-	2.39	-
Tenby	Voy.	25	17	14	17	10	10	26	12	-	-
	Mast.	11	10	12	17	6	6	10	9	-	-
	Unknown	0	0	0	0	1	1	3	0	-	-
	Voy/Mast	2.27	1.70	1.17	1.00	1.67	1.67	2.60	1.33	-	-

were recorded in 1699, 1701 and even 1704. In contrast the numbers of individual masters recorded per outwards voyage at Gloucester remained generally stable. As with coastal imports, the high number of voyages recorded in 1699 was not linked to an increased number of masters. As a result, the ratio of voyages per master seems atypical: unlike Bridgwater in 1697 it appears that in response to higher levels of trade Severn masters merely made more through journeys. This may reflect the small number of vessels on the river capable of navigating in the estuary. In the case of merchants, however, increased coastal imports brought increased numbers, suggesting that the excess was not wholly catered for by master-merchant combinations, but by more freighted shipments in the hands of independent merchants.

At the two coal ports, Tenby and Neath, figures for masters involved in coastal exports are a little less consistent. At Neath trade appears to have been focused upon an established core of key traders. Whilst numbers of voyages were effectively constant, the numbers of masters recorded were declining significantly and the number of regular traders expanding. At Tenby, however, the opposite appears to have been the case: the ratio of voyages to masters fell as numbers in the 1700s surpassed the higher levels recorded in 1695 and 1696. Owing to the particularly small samples for coastal imports, an effective analysis of Tenby's trading community is difficult to construct. It is likely that Tenby was served by shipments bound nominally for Carmarthen and even Llanelli; the port appears to have been served by a very dispersed set of master-merchants who were also active in freighting goods on board boats 'of' and for proximate coastal centres.

Deviations from the sample year can be explained in part by factors such as trade depression or warfare. Reduction of trade at individual centres may have constricted the numbers of voyages undertaken by traders, but not excluded them altogether from the coastal trade. On the other hand, greater economic opportunity may have involved either increased activity by existing traders or expansion in the base of traders. Thus, merchants and masters who might otherwise have been employed in purely local intra-port activities (and therefore escaped Port Book record)

may well have become more involved in cross-regional trade in times of economic stability. For example, on the Severn and the Wye, short-haul trade to and from river centres remained as important as long-distance carriage through the administrative headport. In particular, tramping and transhipment within the boundaries of Gloucester were always profitable commercial activities providing a large body of traders and trow owners that only very occasionally ventured out into the estuary.[68] Such traders were perhaps more likely to be freighted in peacetime. Similarly, short-haul river trade, like overland trade, may have increased during periods when coastal traffic was impeded by privateering or was prohibitively uneconomic. Other factors such as local dearth and plenty, or the transference of coastal operations by merchants to overland routes, cannot be discounted in assessing these figures.

Similarly, masters were opportunistic: they and their craft usually went where the most competitive freight could be gained. Long-distance coastal enterprises and overseas ventures could absorb their activities for months even years. For example, Sebastian Llewellyn, a typical master-merchant, was regularly involved in shipping coal and culm from south Wales to Bridgwater on board the *Comfort* of Bridgwater. On occasion he picked up a freight in other vessels, notably the *True Love* of Bridgwater, on the Bristol and Liverpool routes. Throughout the period, Llewellyn appeared in the Bridgwater Port Books associated with around 16 coastal shipments a year. During most of 1699, however, he was absent mastering the *Willing Mind* of Bridgwater for William Alloway and partners to the West Indies returning only in September.[69] It is clear that the coal trade in the region may have operated on similar lines to the much larger east coast trade as the standby trade: ships and masters could be diverted to other coastal runs, or to overseas ventures as the occasion arose.[70] In such circumstances, regular operatives could effectively disappear from the official record of coasting, their trade distributed either to existing or new operatives.

ii. Traders and vessels: the physical means of coasting in the Bristol Channel.

The Port Books provide an important insight into the complex relationships within the coastal trade. Often this evidence is opaque and only decipherable in relation to other sources. Yet, in the absence of a more descriptive series of nationally compiled records Port Books remain the most comprehensive tool available to the historian. As Willan stressed, the Port Books supply the means to reveal the mechanisms by which goods were moved physically from port to port, the vessels employed in regional coasting and their association with particular masters, independent merchants, regional ports and specific trades.[71] Even so, any analysis of coastal craft must be undertaken with caution. The principal methodological problem concerns how the status of home port attached to boats is to be interpreted. In some quarters it has been assumed that a boat nominally 'of Padstow', for example, was firmly, even unequivocally, associated with that port. The descriptor thus indicated the port at which the boat was based; a kind of practical if informal recognition of ship registry predating the Act of 1786.[72] Other scholars have implied that the home port indicated the residence or port of operation of the boat's merchant or master. As discussed in Chapter 1, the home port could be all, some, or none of the explanations. Undoubtedly, boats were often located at the named home port. However, examples exist of the recorded home port changing within the same port establishment or at either end of a single recorded shipment. Thus, the *Blessing* 'of' Brockweir was usually defined by its Wye home port when trading between Chepstow and Bristol. Clearing Liverpool in 1699, it was described as 'of' Chepstow and yet 'of' Brockweir when it arrived later in Chepstow. To the Liverpool Customs officials, it was sufficient to note the Customs port, whilst at Chepstow, because of the existence of a *Blessing* of Chepstow, officials were required to be more precise. Similarly, traders could well be from the port described, quite equally they could be professional masters chartered from elsewhere, or, more likely, remote merchants paying freightage.[73]

The convention adopted by this research has been to interpret home ports as indicating the port from which shipment commenced.[74] In most cases this indicated the centre from which the vessel habitually traded, particularly in cases where cyclical shipments (characteristic of the coal trade), or regular packet services (for example, to and from Bristol), formed the principal coastal routes. However, port designations could alter. In 1699 Chepstow recorded 15 voyages of the *Richard and Mary*, 13 of which were mastered by Richard Ellis. Whilst in 12 shipments the vessel is described as of Brockweir, 2 voyages were of Tintern (or of Abbey), and one of Chepstow. As all home ports were under the administration of the same Customs house such changes have less serious implications than if two Customs ports were involved. To the Customs system, the most important factor remained the identification of the Customs house responsible for noting the shipment and holding bond money or promissory notes as surety. However, at Liverpool in the same year, the *Diamond*, skippered by Thomas Moneley was variously 'of' Chester, Frodsham and Liverpool depending upon the direction of trade and nature of the cargo, and on 7 occasions Customs clerks failed to note a home port at all. Clearly, in both examples the one boat was involved; both ship names were rare and they were routinely associated with the same master, a factor corroborated by comparing the shipments and personnel listed in corresponding Port Books. A problem does occur, however, when common boat names - the *John* for instance - occur with imperfect or erratic port designations. In such cases it becomes difficult to disentangle the voyages of quite separate vessels which may have shared a common name and operated out of identical ports and home ports simultaneously. In such highly infrequent occasions, association with regular masters generally provides a workable discriminator.

For these reasons, a simple numeric schedule of vessels sorted by recorded home port provides a limited means of analysing both boat operation and the comparative importance of regional ports in the carrying trade. Certainly, numbers of vessels cannot exhibit the range of trade undertaken at each port or the types and trading patterns of coasters that either 'belonged' to it or traded most regularly with it.

What is more, the situation is compounded by the absence of home port data at a number of important regional ports, despite the express instructions of the Board of Trade.[75] None the less, an impression of the frequency with which individual vessels were utilised can be gained from Tables 4.7 and 4.8. In the Tables boats have been systematically disaggregated by comparing details of each craft and its designated home port with details of its regular operators, routes and cargoes. Data of dubious provenance have been excluded, circumventing the problem of double counting. As such, the figures err on the side of conservatism: where there has been any possible doubt as to the designation of a boat, whether by name or home port, its voyage has been discounted. Thus, the number of boats recorded at Barnstaple, Tenby, Milford, and Carmarthen, at which the record of home ports was erratic or non-existent, is likely to be an underestimate.

Table 4.7 separates the number of individual boats trading to and from regional ports from unknown, blank or illegible data. In the case of Minehead and Bideford, entries describing overland trade have also been excluded. The data are expressed in terms of the total number of voyages recorded at each port establishment ordered hierarchically by the frequency with which each boat appeared in the respective coastal Books. The above-Holms centres - Gloucester, Cardiff and Chepstow - which were most intimately associated with Bristol, display the highest ratio of boats to voyages. This concentration of trade was most apparent at Gloucester, where each vessel accounted for an average of almost 8.5 voyages in the sample year, and at Cardiff where each vessel in the abbreviated sample undertook over six shipments. At Gloucester, the physical nature of long-distance river trade was the most significant factor explaining the limited number of boats used. As most trading was confined to the navigation proper, these boats and their operators were specialists in the through trade to Bristol. Other vessels, especially those associated with Bewdley, Worcester and Upton, maintained a more direct trade with Somerset and south Wales. This was in part occasioned by the carriage of salt and in part because Upton boats and masters appear to have been more prepared to undertake longer coastal voyages.

Table 4.7: Boats trading at Bristol Channel ports, sample year.

		Total Voyages	Total Boats	Unknown	Voyages per boat
Gloucester		626	74	1	8.46
Cardiff		31	5	0	6.20
Bridgwater		426	75	1	5.68
Chepstow		410	75	0	5.47
Minehead		476	88	8	5.41
Barnstaple	*	320	89	10	3.60
Tenby	*	186	55	2	3.38
Milford	*	506	157	10	3.22
Bristol		491	172	1	2.85
Neath		437	160	0	2.73
Bideford		297	111	12	2.68
St. Ives		93	35	1	2.66
Ilfracombe		175	69	1	2.54
Padstow		157	65	0	2.42
Carmarthen	*	73	36	2	2.03
Swansea		531	268	1	1.98
Llanelli		81	53	0	1.53
Mount's Bay		17	15	1	1.13
South Burry		13	13	0	1.00
Liverpool		509	224	3	2.27

Table 4.8: Local boats trading at Bristol Channel ports, sample year.

		Total Voyages	Local Boats	Other Boats	Unattributed Boats	% local Boats	Voyages by local boats	% trade in local boats
Cardiff		31	5	0	0	100	31	100
Gloucester		626	65	9	0	88	601	96
Chepstow		410	35	39	1	47	355	87
Bideford		297	80	31	0	72	237	80
Bridgwater		426	37	38	0	49	317	74
Minehead		476	34	48	6	39	294	62
St. Ives		93	10	25	0	29	55	59
Ilfracombe		175	18	50	1	26	100	57
Padstow		157	33	32	0	51	79	50
Carmarthen	*	73	6	13	17	17	28	38
Swansea		531	39	227	2	15	142	27
Mount's Bay		17	2	15	0	12	2	12
Milford	*	506	20	28	109	13	51	10
Neath		437	5	142	13	3	26	6
Llanelli		81	2	51	0	4	4	5
Bristol		491	5	151	16	3	8	2
South Burry		13	0	13	0	0	0	0
Barnstaple	*	320	0	2	87	-	-	-
Tenby	*	186	0	0	55	-	-	-
Liverpool		509	31	156	37	14	93	18

At Chepstow, a similar pattern is evident: a core group of boats and traders formed the basis to trade. For example, in 1699 the *Blessing* of Brockweir was mastered on 27 voyages by John Phillips and on 7 by William Marsh, whereas Thomas Hughes, Thomas Richards and an unspecified master supervised one voyage apiece. In the same year, the *Blessing* of Chepstow was mastered on all 59 voyages by John Gosling. Even so, the ratio of boats to voyages at Chepstow was appreciably less than at Gloucester. This was directly the result of a comparatively stunted inwards trade: boats returning with cargo to port represented only 16% of Chepstow's total trade. However, whilst most Chepstow boats were, like most Severn trows, tied to the regular supply of Bristol, other craft were engaged in more geographically diverse enterprises. Voyages to and from Liverpool and from Cornwall and the south Wales coal ports, nevertheless, tended to be one-off shipments undertaken in specialist craft or by specialist traders appearing only once in the sample. The omission in the Chepstow Port Books of the considerable letpass trade with the Somerset ports also has an adverse effect on the number of voyages undertaken by each boat.

In comparison, the extensive nature of Bristol's trade undoubtedly accounts for the rather lower number of voyages per recorded coastal vessel. Additionally, the complete absence of inwards shipments has had a detrimental effect upon the representation of coasting at Bristol. Apart from Liverpool, Bristol recorded the highest percentage of individual vessels in the sample. However, the steady procession of regular packet-like craft to the most proximate coastal centres was offset by single voyages to more distant ports. This factor greatly increased the number of recorded vessels reported in the Tables whilst reducing the frequency of recorded voyages.

The Somerset ports also feature strongly in the Table. In the sample year, boats entering and clearing Bridgwater and Minehead were involved in between 5 and 6 voyages on average. To a great extent, this resulted from a high degree of flexibility in the employment of coastal vessels. Boats in the coal and salt trades were frequently redeployed in the trade with Bristol or in tramping goods to local ports both within the

boundaries of the customs port itself and to proximate centres, predominantly north Devon.[76] A related practice can be seen in the activity of Severn trows shipping salt and other goods through Gloucester to Bridgwater and Minehead. These vessels were often involved in transporting local letpass cargoes and in the seasonal freighting of coal from south Wales.

The case of Thomas Hooper, master of the *Samuel* of Upton, illustrates this point. In February 1699, Hooper cleared Gloucester with a cargo of salt, flax seed, cloth, and flax and hurds bound for Bridgwater arriving on 3 March. A week later he shipped a letpass consignment of herrings from Ilfracombe to Minehead on behalf of William Alloway, picking up another small cargo of tallow, fish and Irish paper for Joseph Holland en route to Bridgwater. He eventually discharged both cargoes at Bridgwater on 17 March bearing dual documentation. The *Samuel* is next encountered in the Bridgwater Port Books carrying two further herring cargoes for Alloway from Ilfracombe to Minehead in April. After this Hooper proceeded to Bristol, perhaps in ballast, and was chartered to carry a small letpass cargo of glass bottles to Bridgwater, arriving in Somerset on 15 May. From there he returned to Bristol with another letpass cargo of cider, wood ashes, cheese and hair on 22 May. By 5 June the *Samuel* was shipping a load of rock salt from Bristol by coquet probably to Neath - no destination is specified in the Bristol Book. From Neath, the *Samuel* then took coals to Bridgwater arriving in late June, before taking a cargo of peas and wood and soapers' ashes under coquet to Bristol on 3 July. Fourteen days later Hooper was back at Neath again shipping coals to Bridgwater. There is then an hiatus of over a month before the *Samuel* reappears entering Bridgwater on 4 September carrying coals from Neath on a coquet dated 19 August. From Bridgwater the boat most probably went back to Neath in ballast picking up a coal freight on 2 September bound for Gloucester. By the following month, the *Samuel* was shipping white salt and brine to Ilfracombe, arriving back in the Severn (in ballast?) by 30 October to freight another salt and brine cargo to Minehead. On 24 November, Hooper cleared Minehead for Gloucester (the Gloucester Port Book specifies the head port,

Bridgwater) carrying oats, peas and white herrings.

Thus, in 1699 the *Samuel* of Upton completed sixteen recorded shipments of goods. This involved not only the staple long-distance trade in salt, but also the odd opportunistic local letpass cargo, a couple of freights from Bristol, four voyages as a collier, and return cargoes with Somerset goods to Bristol and Gloucester. On most of these shipments, Hooper nominally acted on his own account but was on occasion explicitly freighted for Alloway and Holland. The range of the *Samuel's* activity was exceptional even by the standards of the more adventurous extra- regional coasters. However, Hooper's travels indicate that the classic bilateral relationship between coastal exporting and importing centres, and especially that which existed between Severn ports and usually Bristol, was not universal. Boats, even open trows, went where the goods were and where the most profitable terms could be gained.

At Neath, Bideford, St. Ives, Ilfracombe and Padstow between 2.5 and 3 voyages per boat per year is recorded. The prominence of the coal trade accounts for the degree of consistency between centres of differing size. This was concentrated in the hands of merchant-masters largely from the south west and centred upon a nucleus of specialist boats based at or regularly trading to the ports of south-west England. Below this stratum come the ports at which trade was spread thinly, or where large numbers of vessels were involved. At Swansea, for example, the healthy demand for coal from relatively far flung markets beyond the region resulted in a large number of more distant traders using a wider selection of boats. In 1701, 268 craft were recorded in the Swansea Port Book many of which were from the smaller centres and creeks of the south coast. In comparison, the more confined parameters of Neath's trade in essentially the same commodity meant that rather fewer numbers of craft were used. These vessels were mainly based in the region and thus made proportionally more voyages of a much shorter distance in the sample year. Elsewhere, the single voyage dominated in the smaller centres such as Llanelli. At Mount's Bay and South Burry the level of recorded trade was too small to draw conclusions.

The general assessment of coastal vessels has indicated important

concentrations of trading activity in the region. In Table 4.8 vessels 'local' to the regional port establishment are assessed in order to analyse the patterns and direction of trade. In this context, the term 'local' has been defined to include all craft which were explicitly deemed to be 'of' the port in question or 'of' a creek or inlet under its immediate jurisdiction. Thus, local boats for Minehead include all vessels nominally of Watchet and Porlock as well as those of the main Customs port. This criterion is dependent upon the integral nature of the Customs administration as outlined in Chapters 1 and 2. However, when the 'extents, bounds and limits' of certain ports were disputed, some confusion exists in the attribution of minor ports to immediate member and head ports. The prime example of this was the relationship of the small ports and inlets of the Taw-Torridge estuary with the head port, Barnstaple, and its more important satellite, Bideford. Both ports, exercised functional superintendence over the trade of boats 'of' Appledore, and especially 'of' the major creek, Northam; an ambivalent jurisdictional picture which remained a divisive local issue until well into the eighteenth century. For the purposes of the Table all creeks have been deemed 'local' to both Barnstaple and Bideford. A further issue concerns the number of boats for which no home port is specified. This figure, expressed in column five of the Table, may have occurred either through poor record keeping or simply because the regularity of regional trade encouraged negligence. At some ports such practices have resulted in an overwhelming amount of blank data thus preventing any form of comparative analysis. These ports are flagged and have been included only to contextualise the regional sample.

The Table reveals three broad categories relating to trade conducted in local craft. Firstly, at Cardiff, Gloucester and Chepstow, the vast majority of trade was confined to vessels nominally of the head port or subject creeks. The limitations of the Cardiff sample have already been stressed, although even if missing data for inwards traffic and for the inferior creeks gleaned from other Port Books is included, the exclusive nature of the boats operating from the port jurisdiction is not greatly diminished: only four boats from other designations can be identified as trading to

Cardiff or its creeks, and such shipments were far outweighed by voyages from Bristol undertaken entirely carried in local craft.[77] At Gloucester, only 9 craft had designations which were not associated with the navigation proper or with the immediate estuary under the control of the head port. These vessels, mostly with Wye or south Wales home ports, were involved in 25 voyages, 12% of total shipments. The concentration of trade upon local craft is emphatically demonstrated at Chepstow. Here, boats with home ports outside the immediate jurisdiction of the port were numerically greater, yet they were involved in less than 1.5 voyages per annum. Local craft carried 87% of coastal trade by shipment and almost wholly controlled the regular routes. Only the inwards trades in salt from Gloucester and copper ore from St. Ives were branches of commerce undertaken in non-Wye vessels that were not opportunistic or ad hoc.

A second tier of importance revealed by Table 4.8 comprises the ports at which between roughly a half and three-quarters of trade was conducted in local boats. This section is dominated by the major south-western ports, although given the uncertain status of Bideford vessels, the results may over represent commercial activity: 72% of craft carrying 80% of coastal trade recorded at Bideford was nominally local. Many of these vessels were probably 'shared' with Barnstaple, although the absence of comparative data at Barnstaple removes an important control. At the other south-western ports non-local craft predominate in terms of numbers. However, the proportion of trade engrossed by these vessels was much smaller; around a quarter of shipments at Bridgwater and two-fifths at Minehead. Padstow was the exception to this with a majority of boats (51%) being either of the main port or its creek Port Isaac. However, local craft accounted for only half the recorded coastal shipments, with tramping boats from St. Ives and Clovelly reducing the commercial importance of local vessels.

The final grouping incorporates ports where local craft were both less numerous and cumulatively less active than vessels from more distant ports. This was particularly characteristic of the south Wales coal ports at which local craft were far

exceeded in numbers and tonnage carried by boats operating out of the main importing centres of the south-west. Despite this there was much differentiation between such centres. At Swansea, for example, 39 vessels were associated with local home ports. These vessels undertook 142 voyages, an average of 3.64 shipments per craft per year.[78] At Neath, however, trade was almost entirely the province of boats of remote ports: only five local boats were active in the sample representing 3% of total vessels recorded and 6% of shipments. A similar situation existed at Llanelli with only two local vessels, the *John* and the *Joanna*, both mastered by Abraham King, appearing amidst a fleet of coasters from Northam and other south-western ports. North Devon boats also dominated the trade of South Burry entirely. At Milford, Tenby and, to a lesser extent, Carmarthen, the erratic record of home ports has obscured effective analysis. However, data from the ports of the south west confirms that non-local coasters effectively controlled the trade of south west Wales. At these ports only the Bristol packet boats, and the occasional vessel carrying culm or agricultural staples can be identified as local craft.[79]

The lowly position of Bristol in the Table reveals a telling assessment of its role in regional coasting. Firstly, only 5 vessels were recorded as 'of Bristol' in a total sample of 156 boats recorded in 1699. These boats were essentially independent, occasional craft that were only very marginally involved in the main business of coasting. The five craft recorded undertook a mere 6 voyages constituting less than 2% of shipments clearing Bristol. Some of these vessels, like the *Duke Humphrey* of Bristol mastered by William Davis and bound for Swansea, were most probably overseas ships pressed into coastal service. Such ships appear to have resumed overseas trading without figuring again in the coastal Books of the period. The two boats of Bristol that do appear across the wider sample, the *Mary and Martha* skippered by Henry Keating and Henry Roe's *Roe Sloop*, were linked to the longer distance routes to south-west Wales and beyond to Liverpool. These ports were regular stop-overs on the way to and from Ireland, and it is possible that the boats featured in the coastal Books en route to Ireland and possibly the transoceanic trades.

Alternatively, Keating and Roe may have been operating precursors to the 'constant coasters' - ships that plied between the major ports on as fixed timetables as conditions would allow - that were common later in the eighteenth century.[80] Other vessels, the *True Love* of Bristol, skippered by Francis Cockhill and clearing for Liverpool, for example, appear to be errors caused by the casual slip of the Customs officer's pen rather than genuine attributions.[81]

What is more, Bristol did not operate regular trows or river barges. Thus, the staple trades of the port - the products and markets of the Severn, Wye and Welsh borderland - were conducted wholly in the holds of, or rather on the decks of regional boats, as well as being largely in the hands of regional operatives. Only one Bristol trow has been identified in the entire series of the Gloucester coastal Port Books. This vessel, the *John* (occasionally the *John Trow*), was commonly mastered and merchanted by Thomas Austin or Henry Bailey, and was active between 1704 and 1707, plying the lower reaches of the Severn navigation.[82] It would seem, therefore, that Bristol had a very limited physical involvement in the coasting trade of its hinterland. This is distinct from its commercial interest in or even its economic control over the commodities traded. From the Port Books, the role of Bristol merchants and shipping was vicarious: other boats, other masters, and other merchants framed the organisation of the port's coastal trade.

This pattern is supported by contemporary evidence. The Musgrave figures, for example, reveal that only 180 tons of coastal shipping was recorded at Bristol in 1709. Depending on the size of coasters this may have represented between 2 and 5 ships engaged exclusively in coasting in that year.[83] Writing in 1789, Barrett extolled Bristol as 'without a rival' in 'domestic trade, or inland navigation', able to engross 'the whole trade of South Wales, and [a] great part of North Wales, as well as of the English counties bordering on [the Severn and Wye]'.[84] However, in Barrett's figures for 1787, drawn ostensibly from a parliamentary enquiry, only 30 coasters were enumerated, representing less than 9% of all vessels belonging to Bristol. In terms of total tonnage, coasting accounted for less than 6% of Bristol craft and employed less

than 5% of the manpower involved in shipping ascribed to the port.[85] However, Barrett's figures must be treated with some circumspection. They were compiled after ship registration was enforced nationally and are thus anachronistic to a survey of coasting based on sources which are not strictly comparable and were compiled some 88 years beforehand. Barrett's assessments are also likely to have been rather impressionistic, especially when compared to the official assessment of shipping registered at the port in 1788.[86] None the less, they reinforce the impression gained from the Port Books that Bristol's mercantile and commercial community was mainly involved in owning and chartering vessels engaged principally in the overseas trades.

iii. The coastal craft of the Bristol Channel.

The data discussed above emphasise the need to provide an assessment of the number of boats attached to each port. Table 4.9 presents broad indices of the shipping and tonnage involved in the coastal trade for the sample year, comparing these to the printed and manuscript Musgrave figures for 1709. In addition, the figures extracted by Andrews from letters dispatched from the Customs Commissioners to the Admiralty in 1701 are included, although, as they relate to both overseas vessels and coasters, their utility is more comparative.[87] As Willan and Jarvis have stressed, the national figures are somewhat problematic and there is a very real pitfall of 'comparing the non-comparables'. In particular, severe doubts underpin the accuracy and consistency of the early Musgrave series. What is more, as they deal solely with tonnage, any conversion from total displacement weight to actual ships lying at anchor is necessarily speculative.[88] Indeed, factors such as access to anchorage and port facilities - overcrowded urban ports such as Bristol were unlikely to have the physical capacity for tying up large numbers of coasters - and the character of trade undertaken at each centre were also likely to impinge upon the type and tonnage of local coasters.

In addition, different considerations underpinned the compilation of the two 'official' central lists and these contrast with the procedures governing coastal Port

Table 4.9: 'Home' boats recorded in the coastal Port Books, (sample year), Musgrave figures, (coastal and overseas, 1709) and Admiralty figures, (1701).

Coastal Port Books (sample year)

Port	Local Vessels	Tonnage (conv. B)	Tonnage (conv. A)
Gloucester	65	3250	1755
Bideford	80	2960	2960
Swansea	39	1443	1443
Bridgwater	37	1369	1369
Minehead	34	1258	1258
Padstow	33	1221	726
Chepstow	35	1050	945
Milford	20	740	620
Ilfracombe	18	666	432
St. Ives	10	370	270
Carmarthen	6	222	222
Cardiff	5	185	100
Neath	5	185	185
Bristol	5	185	185
Mount's Bay	2	74	60
Llanelli	2	74	74
South Burry	0	0	0
Barnstaple	-	-	-
Tenby	-	-	-
Total	396	15252	12604
Liverpool	31	1147	1147

Musgrave figures (coastal: 1709)

Port	Vessels (conv. B)	Vessels (conv. A)	Tonnage
Gloucester	57	106	2850
Swansea	58	58	2148
Barnstaple	44	44	1620
Bideford	29	29	1080
St. Ives	24	33	900
Minehead	23	23	850
Padstow	18	30	670
Bridgwater	15	15	550
Milford	14	17	532
Ilfracombe	11	17	400
Mount's Bay	9	12	350
Bristol	5	5	180
Neath	2	2	82
Cardiff	2	4	79
Llanelli	1	1	20
Chepstow	-	-	-
Carmarthen	-	-	-
Tenby	-	-	-
South Burry	-	-	-
Total	313	396	12311
Liverpool	16	16	592

Musgrave Figures (overseas: 1709)

Port	Vessels (60 ton)	Vessels (80 ton)	Tonnage
Bristol	256	192	15365
Bideford	32	24	1930
Barnstaple	24	18	1430
Milford	7	5	426
Penzance	7	5	420
Minehead	5	4	300
Gloucester	3	2	170
Bridgwater	3	2	150
Swansea	3	2	150
Chepstow	1	1	60
St. Ives	0	1	24
Padstow	0	0	0
Ilfracombe	0	0	0
Cardiff	-	-	-
Neath	-	-	-
Llanelli	-	-	-
Carmarthen	-	-	-
Tenby	-	-	-
South Burry	-	-	-
Total	340	256	20425

Admiralty figures (coastal and overseas: 1701)

Port	Vessels	Tonnage	Mean
Bristol	165	17338	105.08
Bideford	84	6299	74.99
Barnstaple	78	3489	44.73
Swansea	37	1468	39.68
Gloucester	48	1289	26.85
Bridgwater	33	1287	39.00
Minehead	30	1094	36.47
Milford	32	995	31.09
Chepstow	28	744	26.57
Padstow	23	509	22.13
St. Ives	15	404	26.93
Ilfracombe	15	358	23.87
Penzance	8	236	29.50
Cardiff	11	218	19.82
Neath	-	-	-
Llanelli	-	-	-
Carmarthen	-	-	-
Tenby	-	-	-
South Burry	-	-	-
Total	607	35728	58.86
Liverpool	102	8619	84.50

Books. Thus, it is clear that the Musgrave figures and the Admiralty list deal to a large extent with head ports, reducing vessels 'belonging' to certain subject creeks to an unrecognised, constituent status. Thus, whilst the Port Book figures for Gloucester represent 'open sea' or through-trade vessels based mainly at Severn and Warwickshire Avon ports, it is possible that a proportion of boats that were confined to the navigation in 1699, and thus did not figure in the coastal Port Books, were included in the enumeration of 1701 and 1709. Similarly, this may explain the erratic record of Chepstow, Carmarthen, Llanelli, Tenby, Cardigan and Aberdovey. Boats of these ports may well have inflated the figures of Cardiff and Milford, the respective head ports and sites of Customs administration. However, the most important subject members and creeks such as Minehead, Bideford, Ilfracombe and the Cornish member ports were recorded consistently and independently.

Secondly, to achieve a comparative framework, Table 4.9 has adopted a simple tonnage:ship conversion taken from summary figures published by Barrett enumerating the combined tonnage and crew of all coastal vessels trading to and from Bristol in 1787. In total, 128,339 tons of coastal shipping passed through Bristol comprising 3,493 ships with an average tonnage of 36.74 tons per vessel. As we have seen, the flexibility of coastal operation meant that many of the coasters both based in the region and servicing it from outside were involved with the Bristol trade at some stage. Thus, the conversion is not without a more general applicability. Despite this, a conversion of 37 tons per vessel may appear a crude underestimate in certain instances. The *Hope* of Bridgwater, for example, was reckoned to be 'about 50 ton, a strong ship but [a] dull sailer' when assessed in 1699, whereas John Scott of Fowey, recommending a coaster for the salt trade, proposed 'a new ship of about fifty tunns, two decks ready for launching'.[89] Whilst these were long-distance coasters quite able to make overseas runs, they should not be confused with specialist ocean-going vessels of upwards of 80 tons which dominate the Admiralty figures for Bristol and Liverpool, and which must have featured strongly in the assessments of Bideford, Barnstaple and other regional centres involved in overseas enterprises. The Musgrave

figures for overseas vessels also emphasise the activity of large ocean-going vessels at these ports. Individual overseas craft could be very large. For example, in 1696 Hoare and Company invested over £300 in the *Fortune*, a Swedish built barque of about '200 tons deadweight' before refitting it for the Newfoundland and Iberian trades.[90] Even so, many vessels engaged in foreign trade were sometimes of a very meagre tonnage, especially those involved in the shorter round trips to Ireland or France.[91]

Nevertheless, the mean tonnage figures derived from the Admiralty list reveal that the average of coastal *and* overseas craft was often well below the 37 tons standard. This is supported by probate inventory assessments of coasting vessels: the two most prominent Cardiff coasters, the *Speedwell* and the *Lyon* were reckoned at 24 tons and 20 tons in 1685 and 1694.[92] In cases where the tonnage per craft assessment is appreciably lower than the standard 37 tons (in effect all ports listed below Minehead in the Table 4.9d) a second calculation has been included alongside the figure derived from Barrett in the Table. This has been flagged as **A** (Admiralty) as distinct from **B** (Barrett). Whilst these conversions suffice for purely coastal vessels, the tonnage of trows, the flat-bottomed, river craft operating the Severn and most probably the Wye, remains a problem. Trows were capable of carrying much larger loads than the more seaworthy and sturdily constructed sea coasters, although this was balanced by their lack of manoeuvrability especially outside the confined waters of the upper Bristol Channel. The trows carrying salt and agricultural goods to Bridgwater in the 1690s - the furthest regular destination for Severn craft - frequently transported 40 to 50 tons. These were open vessels in the main and thus were more affected by adverse weather conditions.[93] However, in 1756, Perry reckoned that Severn trows were 'from 40 to 80 tons burthen ... generally from 16 to 20 ft. wide and 60 ft. in length'. These he distinguished from 'barges and frigates from 40 to 60 ft. in length ... [which] carry from 20 to 40 tons'.[94] The latter were most probably confined to the navigation proper. Barrett, writing some thirty years later, was more expansive in his estimation. He calculated that a further '103 trows from 50 to 103 tons [were]

employed in carrying goods upon the Severn to and from Bristol' in 1787.[95]

Trows in 1699 were certainly large vessels although perhaps not as large as suggested by Perry and Barrett. For the purposes of the Table, therefore, Barrett's lower figure of 50 tons has been adopted as a general rule for craft from the Severn, Wye and Warwickshire Avon. Even so, the mean tonnage per vessel 'belonging' to Gloucester revealed by the Admiralty figures suggests two additional factors have to be recognised. Firstly, it is probable that not all trows were as large as has been suggested and that a proportion of trade was conducted in smaller vessels. This may well have been the case with the fairly specialist Shropshire coal trows that ventured beyond Gloucester.[96] Secondly, overseas boats were included in the Admiralty figures. With Gloucester, overseas trade was sporadic, mostly confined to links between Ireland and Newnham, and decidedly insignificant in comparison to the river trade.[97] However, at Chepstow, overseas trade was an important and growing facet in the expansion of the port and thus represented a significant tranche of the Admiralty figures.[98] By way of control, therefore, column **A** represents a tonnage conversion based on the Admiralty figures of 27 tons per boat at both Gloucester and Chepstow.

Ralph Davis has argued strongly that the eighteenth century witnessed a greater 'operational efficiency' in sea-going vessels. This was measured in larger tonnages, higher ton per man ratios, and steadily improving turn-around times.[99] If Davis's assertions can be applied to coastal shipping, and both Willan and Davis suggest that 'the non-coal coasting trade was growing in volume at a faster rate than foreign trade', these tonnage conversions are likely to be somewhat higher than those which obtained earlier in the century and were sporadically noted in the pre-Restoration Port Books.[100] In addition, the Musgrave lists detailed (at least on paper) ships involved either in coasting or overseas trade, 'accounting each vessel but once'. One has to assume naively that coasters never ventured beyond home shores and that ships designated for the overseas trade never entered into coasting. However, this was not an immutable iron law: the early Musgrave figures must be seen as compromised guesses at best. Despite such 'carping remarks', they remain for all their faults the best

general figures for provincial coastal shipping and far superior in terms of assessing regional shipping to national indices compiled by Davis and Harper, for example.[101]

In comparison, the coastal Port Books noted all vessels, whether nominally 'coasters' or 'foreign traders', which at some time in the year became involved in coastal shipping. Thus, the *Hope* of Bridgwater, normally a coaster, appeared only once in the Bridgwater coastal Books for 1699 importing salt from Liverpool under Michael Current on 14 January. This was because it was chartered to Jamaica in February under the Huguenot John Grislier returning home only in December.[102] It is likely, therefore, that double counting is present in the figures extrapolated from the Port Books, especially if the home port was erratically recorded. However, as the tables are intended to examine usage rather than to analyse deficiencies between the provision of coasting as opposed to overseas craft at each port, this is not vitally important.

Bearing these caveats in mind, the Table highlights the principal features of shipping in the Bristol Channel and its environs. Firstly, the outstanding importance of boats trading through Gloucester is confirmed, especially as craft restricted to the navigation were excluded from the Port Book figures and probably from the Musgrave and Admiralty figures also. There is, however, a marked dissimilarity between the tonnage derived from the Port Book conversion and that from the Admiralty figures. If a trow's average burthen is less generously assessed at 37 tons in contrast to 50 tons, the conversion would be reduced figure to a more credible 2,405 tons, more along the lines suggested by the Musgrave and Admiralty lists.

In the regional sample, Barnstaple and Bideford vessels featured strongly in both coastal and overseas trade. This was despite the fact that Bideford boats were probably overemphasised in the Port Book assessment and that figures for Barnstaple are rather difficult to reconstruct.[103] The prominence of the Taw-Torridge ports suggests that Bristol was subject to direct competition in important branches of overseas trade. Certainly, Bideford and Barnstaple boats were heavily involved in the Irish, Newfoundland, and Iberian trades.[104] In comparison, Minehead and

Bridgwater are revealed to be mainly coastal ports. Both ports are prominent in the coastal Port Book and Admiralty lists, but less so in both the Musgrave lists. Certainly, the number of vessels converted from the Musgrave overseas tonnage (between 4 and 5 boats at Minehead, 2 and 3 at Bridgwater) appears very low, although double-counting, confusion with coastal vessels, or omission cannot be underestimated.

In the Musgrave coastal series the ports of north Cornwall, St. Ives and Padstow, enjoyed relative parity with Bridgwater and Minehead in boats and tonnages recorded. Indeed, the number of boats recorded for Padstow in the coastal Port Books, was on a level similar to that of the more commercially active Somerset centres. However, both Padstow and St. Ives were decidedly inferior to their Somerset counterparts in both the Musgrave overseas list and the Admiralty figures. In these series of figures, the Cornish ports possessed a comparable number of vessels and tonnages to Ilfracombe, the small outlier of Barnstaple. It is possible that the Musgrave overseas list is unrepresentative in this case. In comparison, Mount's Bay (Penzance) recorded only two local vessels in the coastal Port Book sample of 1697. Yet the Admiralty assessment noted eight serviceable coastal and overseas craft, whereas the Musgrave lists indicated that 770 tons of shipping, both overseas and coastal, were linked to the port. This represented between 14 and 17 individual craft and most likely reflected the importance of the pilchard trade with southern Europe in comparison to the erratic and low value coastal trade.

Two other features emerge from the Table. Despite the amount of trade carried in other boats, Swansea retained a large core of coasters. The port was second only to Gloucester in terms of coastal tonnage employed in 1709. Swansea was also heavily represented in the coastal Port Book sample with 39 vessels recorded as 'of' the port or creeks under its immediate superintendence. Both sets of figures confirm that Swansea had a coasting fleet that was both larger than those of its reciprocal trading partners, Bridgwater and Minehead, and more extensive in tonnage and probably number than the combined total of the rest of south Wales. In terms of

overseas trade, however, Swansea was not overly endowed with vessels. The 150 tons of overseas shipping the Musgrave figures record at Swansea in 1709 represents an insignificant level of provision for a port with an increasing overseas trade in coal.[105] Indeed, Milford possessed a greater recorded tonnage of overseas craft in 1709.

Lastly, the lowly position of Bristol in terms of coastal craft is stressed. Both the Port Books and the Musgrave coastal figures indicate that Bristol operated a meagre body of coasters. This contrasted to the extensive combined tonnage of the vessels employed in the overseas arm of the port's trade. This gross imbalance towards overseas craft at Bristol remains the most significant factor in defining the extent to which 'metropolitan' influences can be deduced in regional shipping. Clearly the coastal trade of Bristol was conducted in vessels owned or berthed almost exclusively in the provinces. The experience of Liverpool, however, throws a rather different light upon the operation of an important provincial port within its hinterland. In common with Bristol, Liverpool shipping was dominated by overseas craft, as the tonnages and vessels recorded in the Admiralty assessment and tonnage figures outlined in the Musgrave overseas list reveal. This is unsurprising given the expansion witnessed in the international and transoceanic commerce of the port in the late seventeenth century. Similarly, Liverpool relied on other centres in its immediate coastal hinterland to supply the bulk of coastal vessels. Thus, Chester, Lancaster, Poolton, Grange-over-sands, and Pielfowdrey[106] were the most prominent suppliers of coastal shipping at Liverpool operating in a similar manner to that existing between Bristol and the Bristol Channel ports. Even so, Liverpool, unlike Bristol, operated a substantial number of coasters directly, 31 according to the Port Book records of 1699, 16 if the Musgrave coastal figures of 1709 are stressed. This relative concentration of coastal shipping was probably due to the high capital outlays involved in the long distance routes common to the salt and cheese trades.

A direct comparison between Bristol and London is, however, more problematic. No figures are available in the Musgrave lists for London until 1751 and even these may be defective. Even so, Willan, Nef and Hatcher have remarked upon

how the importance of supplying the capital with coals from the north east encouraged the widespread ownership of colliers and coastal hoys throughout the many east-coast ports.[107] Although London factors do not appear to have been especially prominent in the ownership of such colliers, a significant number of vessels were associated with the capital. Carriage and boat ownership were therefore rather more centrally focused upon London than was the case at Bristol. In this, the difference between the two metropolitan centres was conspicuous.[108] Whereas a locally maintained coal fleet was both desirable and commonplace for the ports of the east coast, the south west and indeed London, it remained much less an economic and commercial imperative to Bristol, which had ready access to proximate supplies of coal. In addition, it is worth emphasising that social factors underpinning shipping may explain the lack of a Bristol-based coasting fleet. Perry's figures for the numbers of owners and boats in Severn ports stress that the Ironbridge Gorge ports and Bridgnorth had by far the greatest concentrations of operatives. As Trinder and Wanklyn have argued, this may have proceeded from the more open nature of the riverside community, the very ad hoc commercial arrangements common to the staple coal trade, and the vagaries of eking a living through an unreliable navigation. In comparison, Bristol did not exist within this uncertain and fluctuating economy or for that matter engender this type of petty boatman. To this extent it was likely to be more profitable for Bristol merchants to leave the physical business of coastal shipping to outsiders and concentrate their capital upon the more remunerative overseas trades.[109]

iv. Conclusion.

This chapter has emphasised that coherent quantitative assessments can be made of the organisation of regional trade from the 'soft data' of merchants, boat masters and their vessels. It has firmly established that the master-merchant combination seen by Willan as the definitive form of coastal operation does not fully describe the extent of trade. Although coal shipments and the regular Bristol 'packet' services were

dominated by the single operator, certain high value commodities, often liable to excise scrutiny and transported over longer distances than was generally the case, demanded a more precise definition of the roles of the financially responsible independent merchant and the 'sea-faring' master. Ports associated with these types of good - St. Ives and non-ferrous metals; Ilfracombe and consignments of herrings; Bridgwater, Minehead, Liverpool and to a lesser extent, Gloucester and the shipping of salt; Minehead and the trade in wool, (which of course legally required this separation) - all show a more complex form of mercantile organisation than ports dominated by coal or more miscellaneous shipments. Even so, the relationship between the named merchant and the ownership of the cargo is not explicit: in some, perhaps a majority of transactions, a hidden class of merchant lay behind the generalised Port Book description.

In the mid-sixteenth century, the commonwealth propagandist, Robert Crowley, directed his righteous anger against those merchants who forestalled the market. He roundly complained that:

'The fryses of Walis
to Bristowe are brought;
But before thei were wouen,
in Walis they are bought'.[110]

Crowley was not concerned as to how Welsh frieze was traded to Bristol, merely that the open market had been subverted. However, if we are to understand more fully how the different elements that facilitated coasting interacted - the 'independent' merchants, the Port Book merchants, the hidden merchants, the masters, the boats and the commodities - it is necessary to get behind the generic descriptions and examine the activity of specific merchants in detail. The following chapter dissects the coasting operation of Hoare and Company and William Alloway, merchants of Bridgwater, in order to demonstrate how Port Book data can be used in conjunction with ancillary sources to begin piecing together the tangled web of local

shipments that formed the basis to the coastal trade of the region.

Chapter 5: The coastal trade in operation: computers, Port Books and merchant papers.

The two previous chapters have presented a structure by which the actions of merchants, masters and vessels involved in the coastal trade of the Bristol Channel can be more readily understood. It has also been shown how the computerisation of coastal Port Books makes it possible to reconstruct the patterns of trade largely dismissed in more general works. In particular it has sought to flesh out some of the thousands of 'mere names' associated with regional coasting.[1] However, the limits of the source have also been emphasised. For example, a study based largely on a single source cannot fully explain the range of factors that encouraged both the large scale independent merchant or the petty boat master to enter the coastal trade. It is known how and through what means trade took place, and the study of coastal Port Books has illuminated the activities of many traders. Even so, questions as to who controlled, ordered or freighted cargoes remain generally unanswered.

This chapter addresses these problematic areas by examining the papers of two Bridgwater-based merchants - Roger Hoare and Company, a major joint stock partnership, and William Alloway, a substantial merchant trader. Both were active during the period under study and both appeared as independent merchants in the Port Books of Bridgwater and its trading partners. When combined with the sophisticated analysis of coastal Port Books that computerisation has enabled, the records of these merchants cast new light on the ways by which coasting was controlled.

The fragmentary nature of merchants' accounts has tended to limit their use.[2] Such studies as have been undertaken have tended to deal with the more 'visible' areas of trade, mainly overseas voyages, the material profits accruing from them, and other ancillary activities connected with foreign trade. As a result, very little attention has been applied to analysing the significance of merchants in the coastal or internal trades. The importance of Hoare and Company and William Alloway in this context cannot, therefore, be underestimated. Their records survive in such diversity as to

allow the historian to make firm conclusions about the organisation of coasting in the Bristol Channel and beyond. Therefore, they act not only as a control for evaluating the wider Port Book evidence, but also provide the means by which the connections between controlling merchants and their factors, agents and boatmen, who, though nominally subordinate, tend to be recorded in the coastal Books, can be more fully understood.

i. Hoare and Company, 1696-1700.

This section is concerned primarily with a discussion of the commercial activity of Hoare and Company as revealed by their surviving papers and the coastal Port Books. Port Books survive for Bridgwater in unbroken series from 1695 to 1699 - the period covered in the commercial accounts - and these have been computerised as part of the ten-year period under study. In addition, the sample year of regional ports provides a comprehensive coverage of trading patterns within the wider Bristol Channel region. Thus, Hoare and Company's activities have not been analysed in isolation, as has often been the case with detailed mercantile accounts, but firmly located within a broad commercial and regional context.

The Company's papers comprise four separate documents - a Letter Book; a Waste Book of accounts; a running Cash Book of credits and debits; and a Cellar Book of warehoused stock - preserved as evidence in a convoluted legal action brought by the creditors of the Company in Chancery in 1709 and 1710 for the recovery of various outstanding debts. Together these give an unrivalled insight into the operation of a joint-stock mercantile partnership heavily involved in regional coasting. The Letter Book represents the most informative source, detailing dealings with the Company's agents, masters of vessels, customers, prospective customers, debtors and creditors, between March 1696 and November 1699.[3] The book falls into two sections. A full account of all letters received by the Company at Bridgwater or by Roger Hoare in London from March 1696 until May 1697 is recorded. There is

then a hiatus until April 1698 in which only the odd letter and memorandum have been noted. From thence, 'out' letters dispatched by the Company from Bridgwater to its operatives, partners and clients are recorded in full until November 1699. Thereafter correspondence is recorded haphazardly petering out by January 1700. At its most comprehensive the Letter Book gives major insights into the operation of a large domestic and overseas mercantile concern, and, for this reason, it has been rendered into machine readable data.[4]

The Letter Book is supported by a more formal set of double-entry accounts known as the *Waste Book*, containing full details of disbursements, obligations and receipts from 25 March 1696 to 21 February 1699.[5] This particularises how the various commodities brought coastwise and from overseas were paid for and then sold throughout Bridgwater's local and more far flung trading hinterland via a wide tertiary sector of smaller merchants, shippers, wholesalers and carriers. The Waste Book, moreover, supplies vital information relating to the Company's involvement in coasting during the times in which the Letter Book was poorly maintained.

The discursive transactions of the Waste Book are roughly summarised in the *Cash Book*. In this a running total of the Company's finances and initial capital until March 1700 was maintained.[6] In addition, a *Cellar Book* lists stocks of goods held at warehouses in Bridgwater itemised by species of good and by warehouse.[7] An inventory of goods lodged in 11 Company storehouses, together with details of purchasers, money disbursed and received, and dates of all transactions is specified in the Book. This covers a period roughly co-terminous with the major accounts but also gives some indication of the fate of the Company's main assets.[8]

Initially the Company was formed by twelve prominent Bridgwater merchants and citizens involved in domestic and overseas trade: Roger Hoare; John Harvey; Valentine Smith; John Franklin; Richard Drake; George Balch; Isaac Heard; John Syms; George Thomas; John Roberts; Joseph Greenway; and Nathaniel Galpine.[9] Hoare served as head of the Company and acted as the financial fulcrum around which business revolved. As M.P. for Bridgwater, Hoare possessed the social and economic

status to protect the Company's interests locally and in London.[10] For example, he defended the west country salt and fishery interests in Parliament during the debates concerning the salt acts of 1697 and 1698-9,[11] he petitioned the Board of Excise 'against the oppressive coal duty', coal being extensively used to fire the Company's salt pans,[12] and he was instrumental in the passing of the private Bill for rebuilding Bridgwater quay in 1699.[13] In addition, Hoare was directly responsible for seeing that the Company's obligations were met by discounting all bills drawn on himself, the Company and the Company's unofficial 'bankers' in London, John and Thomas Fisher, and Obadiah Grevill, and for chasing up recalcitrant private and official debtors. These actions were vitally important following the recoinage crisis of 1696 in which good coin was hard to come by and yet in demand by the Company and its suppliers. Such problems were compounded by the fact that 'good London bills' discounted on reputable merchants or agents and payable in guineas or new money were traded at a premium.[14] On occasion, Hoare was forced to meet the Company's on-going cash flow problems by scrabbling together monies from outstanding debts, the promised or expected sale of overseas goods, ad hoc credit arrangements with Smithfield traders, and even by converting good bank bills at a considerable loss. Such expedients were not always enough and the Company teetered on the brink of financial crisis in January 1697, when Hoare was hard pressed 'to save [the Company's] creditt'.[15] Although, the impasse was averted, Hoare was continually beset with problems arising from the Company's large credit dealings with salt proprietors and the payment of salt excise.

The other members of the partnership oversaw the Company's interests in Bridgwater and the south west. Nathaniel Galpine was responsible for the organisation of the Company's operation at Bridgwater. He also acted as agent to the Company's 'factory' of coals, salt and general merchandise at Ham Mills, the inland depot at the head of the Parrett navigation, managed by his brother, Thomas, and Alexander Wallis,[16] and was involved in a 'fishery' at Lynmouth, partly owned by the Company and partly by other local merchants, notably Alloway.[17] Isaac Heard,

another active member, was a salt merchant in his own right before the formalisation of the Company. He was involved for himself and for the Company in procuring contracts with the salt proprietors of Liverpool, Cheshire and Flintshire and in regularly supplying coal for the Ham Mills factory using his own vessel the *Diligence*.[18] In contrast, Richard Drake appears to have been the Company's 'principall manager' especially during the absence of Hoare in London.[19] In 1696, he was provisioning the Company's ships, collecting debts at Bridgwater, and occasionally acting as Company agent in settling accounts in the provinces.[20] In particular, Drake was associated with a consortium of Bristol merchants led by Abraham Hooke in the ownership and chartering of the *Bonavist* of Bristol.[21] Drake's quarter share in the *Bonavist's* voyages to Virginia was to yield a consistent profit throughout the term of the Company.[22] The remaining members were less active. George Balch was to become mayor in 1709 and with Syms, Greenway, and Harvey remained an important member of the merchant community of Bridgwater well into the eighteenth century.[23]

In September 1696 the Company was reconstructed with an initial capitalisation of £7,500 divided into 25 shares of £300.[24] Drake was the most prominent shareholder with three shares whereas Hoare, Balch, Heard, Galpine, Syms, and John Franklin each possessed two shares in the 'new' Company.[25] When Roberts and Greenway left the following year, a further seven partners - Joseph Denham, William Symons, John Gilbert, William Methwen, Samuel White, Thomas Ledgingham, and Alexander Wallis - joined the original complement.[26] Methwen appears to have become joint manager with Galpine of the Company's affairs in Bridgwater, and also brought to the Company important familial links with Bristol.[27] Ledgingham was an overseas merchant of some importance: in 1698 he chartered a new vessel 'for self and Company' taking peas to Liverpool and bringing back salt for Newfoundland.[28] As business dictated and trade expanded, other merchants were co-opted into the Company. Richard Lowbridge, for example, was admitted a partner in March 1697 largely because of his involvement in Company salt contracts, and

Samuel Codrington, merchant of Bridgwater, joined in September 1697.[29]

However, the partnership was relatively short-lived. By February 1699 the Company had resolved to limit their enterprises especially in the overseas markets by cutting back on their fleet of vessels accumulated over the past three years.[30] By this time financial uncertainties and competing interests were also beginning to thin out their ranks. Writing to Hoare in London, Galpine expressed the view that 'there will be great alterations amongst us and the way that things will terminate seem to be this, that Mr R[ichard] D[rake], Mr J[ohn] H[arvey], Mr Walliss, Mr Clarke & Mr Bicknle (& Mr White in part) seems all to intimate their intentions of proceding no farther'. Galpine emphasised that 'the persons that will continue on a new establishment are Mr Syms, the two Mr Balches, Mr Lowbridg, Mr Codrington, myselfe, Mr Gilbert, Mr Denham, William Methwen &, we suppose, yourselfe'. In addition, the new Company would be joined by Manassee Whitehead with two shares, Richard Oliver of Bristol, and Anthony Juliot of Bideford, a substantial merchant with extensive overseas and domestic links.[31]

The sudden death of Roger Hoare in London in May 1699 severely rocked a Company already financially over-extended. However, the Company agreed to remain trading under the title of 'George Balch, Esquire and Company', and 'to unite farther ... [and] ... if possible to gett one member in every noted port we may have occation to have advise from'.[32] None the less, the Cellar Book reveals that the Company's main assets in ships and fixtures were sold off at this time to individual partners and their associates. Galpine acquired the ocean-going, two-decked *Mary and Elizabeth* for £440; Robert Balch the *Speedwell* for £240; Drake the three quarter share in the *Michael* for £268 10s, the other quarter share being owned by the vessel's operator Michael Currant; John Gilbert the *Hope* for £186; Robert Harvey the *Fly* for £160; and Ambrose Hozee of Exeter, a regular correspondent with the Company, Hoare's own ship, the *Mary*, for £153. In addition, Syms bought out the Company's half share in the fishery at Lynmouth for £434 and Hozee acquired the 'Butts' for an additional £97.[33]

However, the Company did not collapse: the Cash Book reveals that transactions continued uninterrupted until April 1700 at which time the Company still had substantial salt contracts undischarged.[34] Similarly, from Port Book evidence, it is apparent that Balch and Company were commercially active well into 1701 and may have been trading as late as 1703. However, by this time the Company probably consisted of only a rump of the initial compliment.[35] By June 1701 Nathaniel Galpine was trading under his own account as the head of a separate mercantile company.[36] Isaac Heard was described similarly, although he almost certainly had formally detached himself from the Company as early as March 1699. The correspondence between Joseph Farewell and various debtors prior to the Chancery lawsuit in 1709 and 1710 indicates that the Company had by then been in abeyance for a considerable time and had probably not survived beyond the end of 1700.[37]

Nevertheless, during the later 1690's the Company was an important mercantile grouping organising the conduct of coasting locally. It encompassed in both formal and informal association not only many of the principal Bridgwater merchants, but also many important merchants from throughout the region and beyond. The Company thus maintained regular commercial contact with the main coastal towns of the region, the smaller ports of south Cornwall and Devon, the main salt-producing centres of Worcestershire, Cheshire, Flint and Liverpool, and most importantly the principal commercial and financial centres of Bristol and Exeter. Similarly, the Company was linked via a radial network of carriers to substantial mercantile concerns inland, particularly with wool factors and salt dealers in Taunton, Ilchester, Martock and Exeter. Overseas trade was not centrally important to the Company, although agents were retained in Ireland, Barbados, France, Newfoundland, Sweden and Portugal during the lifespan of the partnership.[38]

These extensive commercial interests were maintained by directly co-opting partners in these areas and by fostering close inter-familial links. Thus, Galpine's brother Thomas ran the Company's 'factory of bottles and other things att Ham

Mills',[39] whilst his other brother, John, acted as factor for salt transactions at Dartmouth in 1697.[40] One of the Company's most regular shippers, Michael Currant, master and quarter owner of the *Michael* of Bridgwater,[41] was related to both Galpine and to Edward Tom, merchant of Padstow.[42] Hoare's cousin Edward was sporadically active in the service of the Company in Dublin and his brother, Thomas, at Gloucester.[43] Moreover the Company retained the services of a number of other Bridgwater boatmen and owners, the principal being John Neale and Philip Cockrem. These were merchants in their own right, owning shares in Company vessels and trading in quasi-formal association with the Company proper, being paid freightage. At its height, Hoare and Company possessed controlling interests in a fleet of six vessels that were continually freighted coastally and overseas. In addition, the Company acquired substantial shares in at least two other vessels.[44] This was supplementary to more ad hoc arrangements with local masters and with individual partners' own ships, such as the *Two Sisters* owned by Richard Drake. The Company also had fixed capital invested in the Lynmouth fishery, the *Globe* warehouse at Bridgwater, and the Ham Mills factory.

These important linkages, vital in the conduct of any coasting enterprise, cannot be reconstructed by Port Book evidence alone. Thus, the importance of the Company's papers lies in the light they can shed upon many aspects of the coastal trade not only of Bridgwater but also of the wider Bristol Channel. Whilst, Bridgwater was neither as large nor as significant as Bristol or Gloucester, and did not export coastally the large, multi-valued consignments characteristic of these ports, it was an important regional port acting as the focus and entrepot for a prosperous agricultural, urban and cloth-making hinterland, regularly handling over 400 recorded domestic voyages per year in the later seventeenth century. Hoare and Company's activities within the port, and the region in general, can be summarised under two generic headings. Of primary importance was the coastal import of Cheshire white and rock salt traded through Liverpool, Chester and Flint, and Droitwich white salt shipped via Gloucester principally on board Bewdley and Tewkesbury vessels.

Secondly, the Company engaged in a range of miscellaneous coastal trades, the most consistent of which was that in coal and culm from south Wales. In addition, the Company dealt as merchants and factors in agricultural goods and wool briefly associated with the trade in Droitwich salt. These commodities, derived mostly from felden Warwickshire and Oxfordshire, were traded via the Avon to the Severn, and then picked up by the long-distance Upton, Tewkesbury and Bewdley boats that plied the lower reaches of the Bristol Channel beyond the Holms. The Company was also involved in a range of more occasional trades mainly concerned with the redistribution of overseas cargoes brought into Bridgwater and Bristol. These commodity trades and their impact upon the levels of coasting recorded at Bridgwater are examined in more detail below.

ii. The trade in salt: Liverpool, Gloucester and Bridgwater in the later seventeenth century.

From the 1690s, coastal imports of domestically produced salt formed a highly significant element in the trade of the Bristol Channel. Although salt was widely used as a preservative in a whole range of foods, and also had important industrial uses not least in soap and glass manufacture, it was mostly used in the region's highly developed domestic and Newfoundland fisheries. Large quantities of strong 'searching' salt were consumed in curing cod from the Newfoundland banks, most of which were traded directly or re-exported to Spain and the Mediterranean.[45] In addition, salt was needed to prepare local catches of red and white herring for both export and the domestic market.[46] As Coull and Stephens have demonstrated the ports of the south west of England dominated these trades. However, Bridgwater boats were not as important in the catching or curing of fish compared either to the inshore fleets of Devon and Cornwall or to the larger Newfoundland vessels operating mainly out of Barnstaple, Bideford and Plymouth. None the less, it supplied the many salt pans, salt factories and fisheries that had developed along the coasts of Somerset

and North Devon.[47] The expansion of the salt trade also coincided with the enforced disruption of foreign supplies which had hitherto sufficed for the needs of the Bristol Channel region. In particular, the embargo imposed upon directly imported French bay salt during the Anglo-French conflict of 1689-97 and the subsequent general dislocation of overseas trade badly affected traditional sources of supply. Although Port Book evidence demonstrates that during this period Iberian salt and French prize salt was traded coastally between ports of the region, it remained a marginal item of trade. Even in the short peacetime period between 1698 and 1702, proscriptive duties imposed upon imported salt prevented a full scale recovery and only a minute amount was traded coastally.[48]

Under such conditions, the domestic salt industry gained an increasing share of the home market. During the 1690s, the Bristol Channel was served by the two principal salt fields located in Cheshire and at Droitwich in Warwickshire. In addition, a very small amount of locally produced and consumed salt was produced by evaporating brine or sea water and a similarly minor quantity of the commodity percolated into the region from Tyneside and Shropshire.[49] In Cheshire, white salt was made by boiling salt brine at the three central wiches: Northwich; Middlewich and Nantwich.[50] By the late seventeenth century, Northwich was the largest centre and most accessible to coastal waters. From there salt passed to Frodsham in the Mersey estuary, and appeared in coastwise cargoes clearing Liverpool and sometimes Chester. The two other Cheshire salt wiches, were somewhat in decline at this time, although supplies of white salt from these brineries were traded overland and also entered the coastal trade via Frodsham and Liverpool and, more especially, the river Severn. Cheshire white salt (and often a fair amount of rock salt) thus formed a small but regular proportion of salt passing through Gloucester.[51]

However, by the 1690's, the Cheshire brinemen were being placed under increasingly fierce competition from the rock salt ınterest. Rock salt was first mined in 1670, yet was only exploited on a commercial scale in this decade. It was cheap and potent, and was also exempted from the full strictures of excise payment by way

of generous adjustments in the weight of the official bushel and drawbacks of duty available on rock used in the fisheries.[52] Although, as Barker and Hughes have emphasised, the advantages rock salt enjoyed over wich salt were quickly if not entirely redressed by the Acts of 1696 and 1699, the impetus given to the trade in rock was significant. During the later 1690's, many refineries of rock salt were established in the adjacent Mersey and Dee seaboard and also throughout the south-west and Wales, where access to cheap supplies of coal encouraged investment.[53] As William Stout emphasised 'rock [was] carried ... by sea to all parts of England and Ireland, and melted ... with sea water and boiled ... up into a strong salt, as good [as] French [or] Spanish salt'.[54] This 'salt upon salt' was of a more coarse grained variety and was widely used in the fisheries. At Bristol, salt made in this way sold at a substantially higher price than Droitwich salt.[55]

Stout's comments are reflected in the coastal exports of salt from Liverpool. Although a comprehensive examination of the Liverpool Books has not been practical, an idea of the increase in white and rock salt traded can be gained by comparing Willan's calculations for 1690 with the Port Book figures for 1699. According to Willan, Liverpool shipped off 95,400 bushels of unspecified Cheshire salt in 1690, the equivalent of 2,385 tons, if the lower 56lb bushel of white salt (likely to have formed the vast majority of trade at this time) is used in calculation. 81,675 bushels (2,041.88 tons) - 86% of the trade noted by Willan - was destined for the ports of the Bristol Channel.[56] By 1699, the combined quantities of rock and white salt clearing Liverpool accounted for 184,100 bushels, or more precisely 7,509.34 tons.[57] By this stage quantities traded to Bristol Channel ports had almost doubled to 4,024.69 tons. However, this now represented only 54% of Liverpool's coastal exports of salt, with Lancashire, Cheshire, Flint and north Wales accounting for substantial quantities of the commodity.

A second source of white salt were the brine springs of Droitwich. For most of the later seventeenth century, the output of the Droitwich salteries had been strictly and prescriptively controlled by salt proprietors in order to maintain price levels.

However, this association was broken by the intervention of Robert Steynor who between 1693 and 1695 sank new brine pits explicitly challenging the rights and privileges of the old monopoly. What is more, Steynor successfully defended his actions in Chancery. By 1695 the monopoly was blown open encouraging further speculative enterprises. In consequence, the wholesale price of Worcestershire salt appears to have fallen dramatically both at Droitwich and at Bristol.[58] By 1703, the retail price of 'wich salt brought downe the river Seaverne' and sold at Bristol was fixed at between 4s. 6d. and 4s 8d. a Winchester bushel. Transport costs, duties and additional charges amounted to perhaps three-quarters of the retail price.[59]

The upsurge in activity at Droitwich inspired by Steynor was closely matched by the levels of salt clearing Gloucester coastally. The chronology of the Droitwich salt trade has been charted by Wakelin who rightly focused upon the crucial period 'sometime between 1684 and 1697' in which he deduced 'the downstream trade in salt became overwhelming'.[60] However, the full computerisation of the Gloucester coastal Port Books has enabled a more precise appraisal of trade to be made. The development of the coastal trade in both Droitwich white salt and small consignments of Cheshire rock salt from Gloucester between 1684 and 1704 is depicted in Table 5.1. To equalise the differences between the white salt and rock salt bushel all measures have been converted to the ton.[61] As a consequence, the figures for salt shipped inwards in 1684 and those clearing Gloucester in 1697, 1699 and 1704 are slightly higher than Wakelin's original estimates which were based on the universal application of the smaller 56lb Winchester bushel of salt. Even so, Table 5.1 re-emphasises the main elements of Wakelin's initial premise. From modest beginnings the long-distance river trade in Droitwich salt assumed vast proportions very quickly. The 'breakthrough' appears to have taken place between 1695 and 1696. The incomplete data which exist for the half years ending in December 1693 and December 1694 confirm the consistent nature of trade. In the half year to December 1693, less than 48 tons of salt was exported coastally in 22 shipments, whilst a similar period ending December 1694 just under 42 tons cleared the Severn in 20 voyages.[62]

Table 5.1a: Salt exported coastally from Gloucester (in tons), 1684-1704.

Year	Quantity	Shipments	Mean	Total Shipments	% shipment with salt
1684	0.20	2	0.10	252	1
1685	-	-	-	213	-
1686	0.03	1	0.03	296	0
1689	172.45	39	4.42	270	14
1691	145.38	55	2.64	451	12
1692	108.85	27	4.03	375	7
1695	308.90	58	5.33	289	20
1696	852.48	135	6.31	334	40
1697	1131.30	126	8.98	357	35
1699	1806.54	123	14.69	332	37
1701	1926.50	126	15.29	335	38
1704	2861.05	132	21.67	331	40

Table 5.1b: Salt imported coastally to Gloucester (in tons), 1684-1704.

Year	Quantity	Shipments	Mean	Total Shipments	% shipment with salt
1684	34.93	10	3.49	263	4
1685	26.00	5	5.20	194	3
1686	57.38	12	4.78	213	6
1689	15.13	9	1.68	270	3
1691	0.08	1	0.08	262	1
1692	0.05	1	0.05	250	1
1695	0.10	1	0.10	235	0
1696	0.08	1	0.08	190	1
1697	-	-	-	235	-
1699	2.90	4	0.73	294	1
1701	-	-	-	216	-
1704	-	-	-	252	-

From 1695, however, the trade in salt grew exponentially. Between this date and 1704, the number of shipments more than doubled and the quantity of salt traded multiplied by a factor of over nine. The size of consignments similarly rose from a modest average of 5.33 tons per voyage in 1695 to the considerable level of 21.68 tons in 1704. Throughout this period, Droitwich salt developed from a small part-cargo in miscellaneous downriver shipments to the central item of trade, included in up to 40% of all voyages clearing Gloucester. As Figure 5.1 reveals, trade continued at high levels through the first half of the eighteenth century.

The quantities of salt shipped inwards declined in inverse proportion to the downriver shipments. Between 1684 and 1686, Gloucester was a net importer of coastally traded salt. This consisted mainly of salt - probably transhipped French and Iberian salt - traded from Bristol; two large consignments of Spanish salt; and a single shipment of 70 bushels of rock salt from Liverpool in 1684. By 1689, the next full year available, the position had altered radically: only a trickle of salt was traded upriver and this was far outweighed by the 172.45 tons shipped out of Gloucester in 39 voyages. Undoubtedly, war had serious repercussions, yet, as in the wider Bristol Channel, peacetime did not witness a recovery to former levels. Apart from 1699, when four very small consignments of foreign salt entered Gloucester, there were no recorded examples of upriver trade.

The development of the Cheshire and Droitwich salt fields and brineries ran parallel to the growth in the salt trade at Bridgwater. In the later 1690s, Bridgwater was the second most important regional centre importing salt coastwise, and was only surpassed by Bristol which exploited its unique relationship with the Severn navigation to engross supplies of Droitwich salt. Some of this salt was re-exported coastally. In the sample year, for example, Bridgwater received just over half the amount of salt traded to Bristol: almost 1,200 tons were shipped into the Somerset port compared to the 2,260 tons discharged at Bristol. Bridgwater even outstripped the combined coastal imports of salt at Barnstaple, Bideford and Ilfracombe, the regional centres of the Newfoundland and domestic fisheries. In 1699, the north

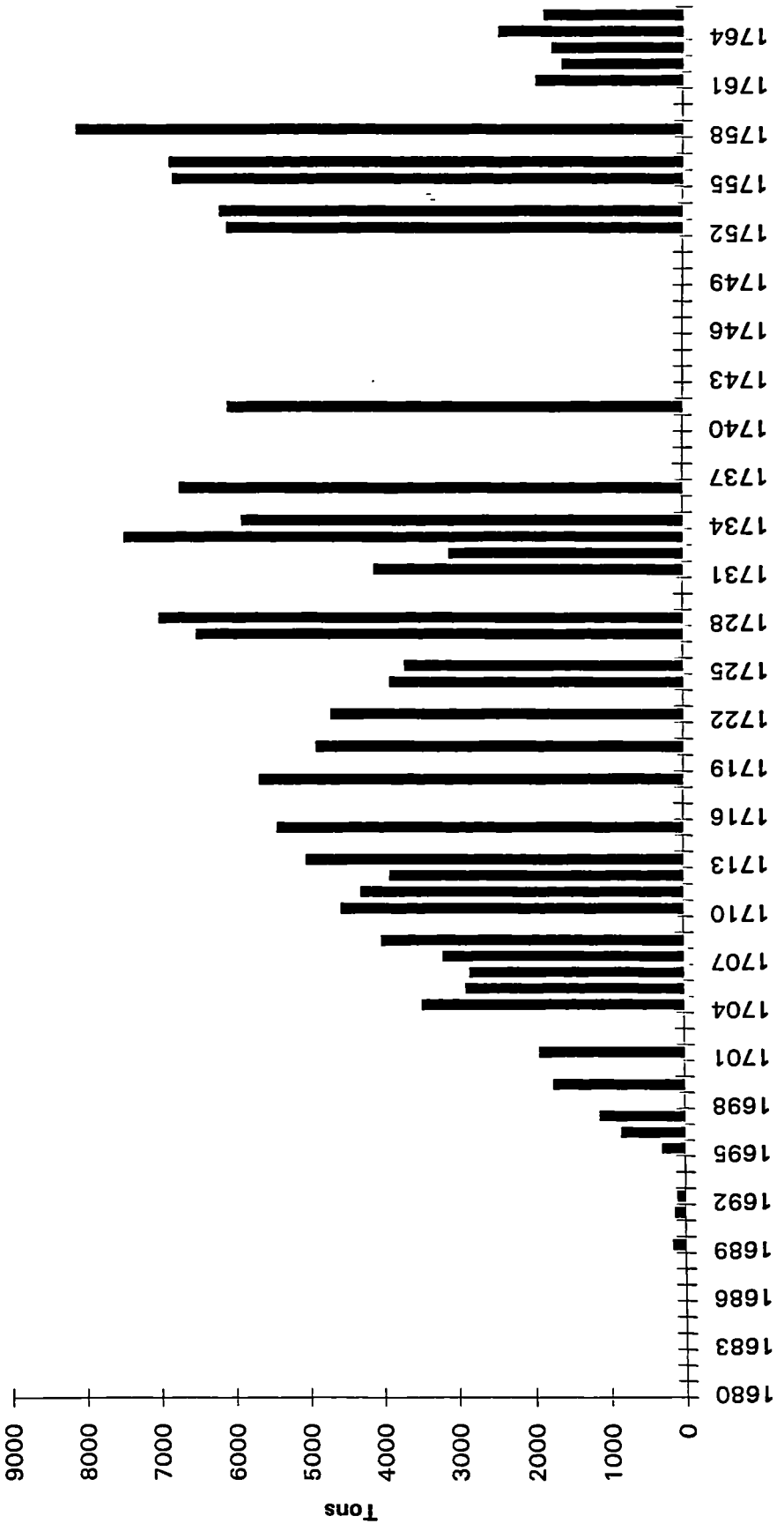


Figure 5.1: Salt (in tons) exported coastally from Gloucester, 1680-1765.

Devon ports received just over 858 tons of salt, although it is possible that additional supplies were imported from abroad.

However, the Bridgwater coastal Port Books reveal that the salt trade fluctuated dramatically in this period. Table 5.2 shows the quantities of white salt and rock salt shipped to Bridgwater between 1695 and 1703, recording the number of voyages and the mean quantity carried per shipment. The distinction between rock and white salt has been preserved for, although they were used in similar ways, they were not inherently the same commodity. For commercial, administrative and taxation purposes, white salt and rock salt continued to be regarded as related but distinctive goods throughout the eighteenth century, a factor emphasised by the very different measuring standards applied to each commodity.[63] Customs clerks tended to weigh salt by either the ton or the bushel although a variety of highly unstandard measures were also used, especially in relation to Droitwich salt traded through Gloucester in the early stages of the trade. None the less, by the Act of 1694 rock salt was assessed at a far more generous 'double' bushel of 120lb rather than the standard Winchester bushel of 56lb that was applied to white and refined salt in accordance with the Act of 1670.[64] Despite the remedial Act of 1696, which ameliorated some of the anomalies concerning the drawback on duty favouring rock salt, the 120lb bushel standard remained in force until May 1699. From this date, the bushel was reduced to 75lb, in order to squeeze a 'farther duty on Rock' by taxing its consumers.[65] A final Act of May 1702 restricted the refining of rock salt to an area within a ten mile radius of extraction, established refineries excepted, and further reduced the bushel to 65lb, a level at which it remained for the rest of the eighteenth century.[66] The convention adopted throughout this section has been to convert by the ton weight of 2,240 lbs as defined by statute. This has addressed the problem of accurately quantifying the bushel often sidestepped in other research.[67] However, in the case of 1699, all voyages bearing coquet dates prior to the change in the bushel of rock salt have been assessed at the higher rated bushel of 120lb, and those afterwards assessed at the 75lb bushel standard. Similarly, the change in the rock salt bushel from 75lb to 65lb in

Table 5.2: Coastal imports of salt and white salt (in tons) to Bridgwater, 1695-1703.

		Gloucester	Liverpool	Bristol	Chester	Others	Total
1695	qt	2.50	787.62	0.50	-	0.25	790.87
	voy	2	18	1	-	2	23
	mean	1.25	43.76	0.50	-	0.13	34.39
1696	qt	182.36	973.74	2.29	37.50	35.00	1230.89
	voy	14	27	1	1	1	44
	mean	13.03	36.06	2.29	37.50	35.00	27.97
1697	qt	401.31	304.96	-	-	7.00	713.27
	voy	20	10	-	-	1	31
	mean	20.07	30.50	-	-	7.00	23.01
1698	qt	704.51	46.26	19.78	35.00	-	805.54
	voy	23	5	1	1	-	30
	mean	30.63	9.25	19.78	35.00	-	26.85
1699	qt	393.50	19.20	-	37.50	27.00	477.20
	voy	14	6	-	1	1	22
	mean	28.11	3.20	-	37.50	27.00	21.69
1701	qt	407.91	-	2.30	-	3.00	413.21
	voy	16	-	1	-	1	18
	mean	25.49	-	2.30	-	3.00	22.96
1703	qt	724.77	-	-	-	12.75	737.52
	voy	33	-	-	-	1	34
	mean	21.96	-	-	-	12.75	21.69

Coastal imports of rock salt (in tons) to Bridgwater, 1695-1703.

		Gloucester	Liverpool	Bristol	Total
1695	qt	-	55.85	-	55.85
	voy	-	7	-	7
	mean	-	7.98	-	7.98
1696	qt	24.00	556.34	-	580.34
	voy	2	20	-	22
	mean	12.00	27.82	-	26.38
1697	qt	-	279.41	-	279.41
	voy	-	6	-	6
	mean	-	46.57	-	46.57
1698	qt	-	361.76	-	361.76
	voy	-	8	-	8
	mean	-	45.22	-	45.22
1699	qt	-	689.05	33.00	722.05
	voy	-	18	3	21
	mean	-	38.28	11.00	34.38
1701	qt	7.06	638.17	-	645.24
	voy	2	13	-	15
	mean	3.53	49.09	-	43.02
1703	qt	5.69	523.10	-	528.79
	voy	1	11	-	12
	mean	5.69	47.55	-	44.07

1702 follows the above procedure.

Changes in the rock salt bushel impacted strongly upon local merchants. News, or even rumour, of the impending revision of 1699 prompted a flurry of activity to buy up rock at 'old duty' rates. Hoare and Company, who had more than a little insider warning of Parliament's action and also found themselves in the invidious position of having nearly depleted their existing stocks of rock, scoured their sources with increasing desperation. Thus, the Company wrote to Edward Hackett, their agent in Bristol, entreating him to purchase any rock salt at £6 per ton that had been sent to Bristol from Liverpool. The need to acquire additional supplies was such that Hackett was required to 'imploy some trusty freind to look out at their coming in either at Hung Road or elce where' and to buy as much as possible and dispatch it directly to Bridgwater unless further news abating the proposed legislation should reach him.[68] Robert Hyde, the salt proprietor of Liverpool and Sutton, was also petitioned to 'procure one hundred ton [of rock salt] ... purchased and removed from off the pitts if it may be done before the double duty commenceth'.[69] Further agreements with Hyde and Thomas Warburton were proposed to get as much rock salt of the old duty as possible bought and warehoused before the provisions of the Act were in place. The Company, having secured the duty, could then let the salt 'ly to our account afterwards a month or two untill we get opportunity to ship it home if no opportunity falls out sooner'.[70]

The frenetic actions of Hoare and Company highlight two problems in assessing the levels of rock salt traded. Firstly, it is clear that the statutory imposed bushel was not merely a fiscal construct of the excise, an arcane device used solely in assessing duties and drawbacks payable and redeemable by the merchant, and with little practical application. The revised rock salt bushel not only entered the commercial language of customs accounts, but also directly affected the coastal trade. Merchants, and indeed Customs clerks, operated under the strictures of the sporadically revised bushel and did not use, for example, the Winchester bushel as the means of *trade* whilst deferring to the 'Parliamentary' bushel in dealings with the

Board of Excise and its myriad local agents. This is unsurprising for excise officials hounded coastal and river vessels unremittingly at both the ports of clearance and destination to prevent fraud by concealed underweighing or unstandard measures, and were active in prosecuting alleged abuses. In all such cases, the Excise bushel was the enforced mercantile measure.[71]

However, it is far more difficult to distinguish shipments of rock salt traded under different official bushels. In particular, 1699 and 1702, the years of change, remain problematic. Quite naturally, merchants were desirous to accumulate as much 'old duty' rock as possible, providing certificates thereafter that contracts for the commodity were secured (and bonds for the requisite duties taken) before the provisos of the new statute had taken effect. The chronological 'cut off' points established by statute did not, therefore, automatically translate into trading practice. Thus, writing to Robert Hyde in May 1699, Galpine, Hoare and Company's Bridgwater manager, detailed specific orders on how to load the *Fly* with rock salt. The boat's master, Charles Hyman, was to separate physically cargoes of old and new assessed salt, for 'if [the *Fly* does] bring home part new duty rock & part old it must be kept apart'. This was due to the different official ratings and also 'because the New Act will not allow a Drawback on Refining for £75 without an oath'.[72] In this light, it is probable that ton conversions derived from Port Book data for 1699 especially are underestimates as an unspecified amount of trade would have been conducted under the old bushel.

The confusion surrounding the rock salt bushel was compounded by the almost universal 'fragmentation of measuring standards' that existed in different branches of the trade.[73] For example, the Winchester bushel by which all domestic white salt was to be measured, or the 84 lb foreign salt bushel were often ignored in the case of certain types of densely grained, high quality salt. For example, Nathaniel Ludlow claimed that salt from his Cheshire works was 'better than either French or Spanish salt for it outweighs the heaviest of them by 15 or 16lb in a bushell, for a bushell of this salt ways 92lb'.[74] Ludlow ventured a ton of this salt to Hoare and Company in January 1697, the transaction appearing in the Bridgwater Port Book. This appears

from both the Port Books and Hoare's accounts to have been weighed in accordance with the Winchester bushel, although there is no way of confirming what standard applied. Clearly, 'official' measures only conformed to commercial actuality in a very loose way. Similarly, all foreign salt, whether French bay salt or Iberian white salt was often remeasured under the Winchester bushel when trade coastally.[75] Its implication in regional trade was, however, largely insignificant. Regionally divergent and often legally suspect measure was also exploited by regional merchants, who, if Hoare and Company can be seen as exemplifying general commercial practice, insisted on receiving goods in 'merchant ton' weight. This 'longer ton' of 120lb per hundredweight, or 21 cwt per ton was not restricted to salt transactions but remained common practice in many other branches of internal trade.[76]

The results of Table 5.2 are summarised in Tables 5.3 and 5.4. These tables provide aggregate totals of the quantities of rock and white salt traded coastways to Bridgwater indicating the relative importance of the principal ports of coastal export and contrasting the salt trade in terms of shipments with the full profile of the inwards trade at Bridgwater. The three tables reveal important patterns in the distribution of salt imports at Bridgwater between 1695 and 1703. Firstly, Gloucester and Liverpool - the main ports through which Droitwich and Cheshire salt was traded - are confirmed as the only significant centres of note trading coastally. At no year during the period studied did salt shipped through Gloucester or Liverpool account for less than 92% of salt landed at Bridgwater.[77] Bristol traded regular, small consignments of transhipped white salt and, in 1699, rather more Cheshire rock salt. The occasional, large cargo of white salt also emanated directly from Chester, probably from the salt works on the Flintshire coast which came under the customs jurisdiction of Chester. The other centres recorded dealing in white salt were of minor importance and trade prosecuted with them was of a singular, highly ad hoc nature. For example, in 1699, a letpass cargo of 27 tons of white salt was brought in from nearby Minehead after being discharged there on the account of William Alloway; and in 1703, 12.75

Table 5.3: Total quantities of rock and white salt (in tons) imported coastally to Bridgwater, from ports of clearance, 1695-1703.

	Total	Liverpool	Gloucester	Other Ports	% quantity Liverpool	% quantity Gloucester
1695	846.72	843.47	2.50	0.75	100	0
1696	1811.23	1530.08	206.36	74.79	84	11
1697	992.68	584.37	401.31	7.00	59	40
1698	1167.30	408.02	704.51	54.78	35	60
1699	1199.25	708.25	393.50	97.50	59	33
1701	1058.45	638.17	414.97	5.30	60	39
1703	1301.44	523.10	730.46	12.75	40	56
Total	8377.07	5235.46	2853.61	252.87	62	34

Table 5.4: Total quantities of rock and white salt (in tons) imported coastally to Bridgwater, 1695-1703, expressed in terms of total inwards shipments.

	Total	Shipments	Mean	Total Shipments	% carrying salt
1695	846.72	23	36.81	382	6
1696	1811.23	48	37.73	282	17
1697	992.68	31	32.02	442	7
1698	1167.30	34	34.33	315	11
1699	1199.25	38	31.56	331	11
1701	1058.45	31	34.14	344	9
1703	1301.44	45	28.92	360	13

tons (510 bushels) was traded from the Severn estuary port of Newnham. Small parcels of salt were also imported coastally on letpasses from Swansea in 1695, including the only occurrence of French salt (presumably traded as prize goods given the provisos of the embargo then in force), from Cardiff in 1697, and from London in 1701.

Secondly, the steady expansion of the coastal trade in salt implied by the data for Gloucester and Liverpool was not directly paralleled by the amount of salt imported at Bridgwater. In this period, the quantity of salt traded and the consequent number of shipments peaked early. In 1695, 23 voyages - a mere 6% of total inwards voyages - carried just 846.72 tons of salt into Bridgwater. However, by 1696 the coastal trade in salt had more than doubled: over 1,811 tons of white and rock was shipped in 48 voyages. This represented the highest mean shipment - over 37 tons per voyage - recorded in the sample. In terms of the percentage share of total inwards voyages, 1696 is similarly revealed to be the most important year: over 17% of all voyages entering the port carried salt, although this was the result of generally lower levels of trade. In comparison, 1697 was a slack year with less than 1,000 tons imported coastally. Domestic supplies may have come under competition from disembargoed French salt and increased imports of Iberian salt into the region. For example, in the early months of 1697, Hoare and Company encountered much difficulty shifting two cargoes of white salt brought coastways from Liverpool to the south coast of Cornwall. The long and dangerous voyage, poor brokerage, bad advice, and the availability of even highly priced French salt ensured that the Company's salt sold at a loss.[78] Similarly, Bridgwater may have experienced some competition from local ports. Coastal imports of Droitwich salt at Minehead rose from negligible levels in 1695 and 1696 to over 207 tons in 1697.[79] In 1699, Minehead received 286.23 tons of salt and in 1701 a minimum of 129.53 tons from Gloucester.[80] Minehead and Watchet also imported salt from Liverpool, 137 tons of rock and white being discharged in 1699.[81] Even so, this was only a minor trade compared to the amount sent coastwise to Bridgwater. In 1698, the quantity of salt had recovered somewhat

with almost 1,200 tons discharged. Thereafter levels appear to have balanced out, with signs of a modest increase in both quantities and shipments apparent in 1703 at which time warfare may have diminished overseas supply. Even so, the amount of salt traded to Bridgwater in 1703 represented less than three-quarters of the levels obtained in 1696.

This broad quantitative outline masks a dramatic shift in the directional basis to the salt trade at Bridgwater. From Table 5.2, it is clear that in 1695, Bridgwater obtained the vast majority of its coastal supplies from Liverpool. This consisted mostly of Cheshire white salt: rock salt when traded was carried only as a part-cargo, as witnessed by the low mean shipment size recorded per voyage in both 1695 and 1696. In comparison, the trade via Gloucester had yet to make an impression upon coastal imports at Bridgwater. In 1696, the peak year for total trade, Liverpool was still the most significant provider of domestic salt: some 84% of salt discharged at Bridgwater was either Cheshire white or rock salt or salt refined in the Mersey estuary. However, by this time, rock salt accounted for a proportionally larger share of the trade, occupying over a third of the tonnage of salt shipped via Liverpool. Although Droitwich salt was beginning to be traded in small quantities, its share of the Bridgwater trade (11%) was still peripheral. However, 1697 saw a major shift in the directional basis to supply and the emergence of a distinctively specialist nature to the competing branches of the domestic trade. In this year, salt derived from Liverpool constituted under 60% of trade, with rock salt far more prominent than in earlier years. Although more ships carried white salt from the Mersey, the increased mean shipment size of vessels trading cargoes of rock salt indicates its growing importance. In addition, imports of Droitwich salt had more than doubled to supplement the decline in white salt from Cheshire. Moreover, by this date the small quantities of rock salt that had hitherto filtered into Severn trade overland from the Cheshire fields had dried up.

The tendency for trade to become polarised between Droitwich white salt traded via Gloucester and Cheshire rock salt clearing through Liverpool was more

pronounced in 1698. Reliance upon supplies from Liverpool fell dramatically with only around a third of all salt shipped coastally to Bridgwater having cleared Liverpool, and almost all of this was rock salt. Indeed, Cheshire white salt and white salt refined from rock had dwindled to minor levels and was traded only alongside the more significant cargoes of rock. What is more, both Bristol and Chester, essentially small transshippers or producers throughout the period, were dealing in more white and refined salt than Liverpool. In contrast, 704.51 tons of Worcestershire salt were shipped to Bridgwater in 23 voyages in 1698. This constituted some 60% of the total trade in salt and the highest mean shipment (30.63 tons of salt per shipment) carried by Severn trows and barges during the period.

This geographical specialisation was the result of the aggressive marketing of Droitwich salt which progressively drove out supplies from Cheshire. For example, in August 1698, Hoare and Company wrote to Partington and Massey, co-partners in salt works in Cheshire and Flint, requiring the firm to load the Company's vessel, the *Speedwell* of Bridgwater, with white salt for Ireland or Bridgwater. In this, Galpine expressed the hope that their concerns would 'not be ruined by Droitwich men'.[82] However, Massey's failure to supply cheap and ready white salt forced the Company to insist on 'good rock salt' instead.[83] The proclivity of the Company for rock salt reveals the changing commercial basis to the trade at Bridgwater. 'If your loading of white [salt] will soon be ready & can be so shipt as to turn to any account', wrote Galpine the following month, 'you may keep her [the *Speedwell*] for white, but here you are to take notice that we do buy Droitwich salt, delivered at this port, for 8s per ton/ and if yours, allowing the vessell a convenient freight, will not come so cheap, she was better [to] come away direct with her Rock, iff she tarrys for white at Fraudsham'.[84] The implication was that neither Cheshire white salt nor salt refined from rock on site, staple items of trade in 1695 and 1696, could now compete at Bridgwater with the lower production and transport costs enjoyed by Droitwich salt. With rock salt, however, low initial costs, supplementary excise drawbacks and other financial incentives were enough for the more arduous and costly journey from the

north west to remain profitable. Refining, however, gravitated towards the Company's own salt works in the south west at least until the remedial statute of 1702.

The pattern described above was repeated in 1699 and 1701. Cheshire white salt declined to negligible levels, eventually ceasing to be traded at all. For a time rock salt from Liverpool assumed a much greater proportion of inwards trade accounting for around three-fifths of all salt traded. This may have been the result of more stable international conditions which encouraged the prosecution of long distance coasting. In 1703, however, when war had recommenced and statutory limits had contained the rock salt interest, Droitwich salt once again assumed a pre- eminent position. In this year Severn trows undertook substantially more voyages (33) than vessels clearing Liverpool (11). However, Severn trows carried far less salt per shipment, accounting for only 56% of salt discharged coastally at Bridgwater. This was largely due to the presence of additional bulky items of trade, predominantly grain, that were carried alongside salt in most trows. In comparison, the craft clearing Liverpool tended to specialise in salt to the exclusion of other commodities bar infrequent consignments of wool and cheese and the occasional piece of linen or Irish flannel.

iii. The organisation of the salt trade at Bridgwater: Hoare and Company and William Alloway.

The figures extrapolated from the Bridgwater coastal Port Books give a broad narrative of the local salt trade. However, understanding how trade was organised imposes rather more stringent requirements upon the analysis of Port Book data. As the previous chapter stressed, coastal Port Books provide much detail on the merchants, masters and the means by which trade was conducted. Yet such evidence is highly equivocal. In particular, the relationship between the 'Port Book' merchant and the 'true' merchant who financed, compiled and ultimately disposed of the cargo remains a very complicated area only partially resolved by the coastal records. None

the less, when used sensitively, Port Book data can provide the statistical framework for contextualising the more illustrative and anecdotal evidence relating to individual merchants and operators. This section seeks to combine evidence taken from the Bridgwater Books with the highly detailed but more specific accounts of Hoare and Company and William Alloway.

Tables 5.5 and 5.6 specify the merchants importing rock and white salt into Bridgwater as recorded in the Bridgwater coastal Port Books between 1695 and 1703. In these Tables, merchants have been arranged by the total quantity of salt in tons each discharged at Bridgwater each year. In addition, the customs port from which vessels cleared, the number of salt voyages per merchant, and the mean consignment of salt carried per shipment, are specified.[85] Furthermore, Table 5.6 includes all forms of salt not specified as rock in the Port Books. Thus, the one voyage of foreign salt and the shipments of refined or 'English made' salt are incorporated in this Table.

The Tables reveal four main types of salt merchant. In terms of the size of operation the most prominent class of trader was the salt proprietor, refiner, owner of salt works, or large salt dealer from Liverpool and Cheshire who may have organised salt shipments on his own account and risk, but was most likely to have acted as the named indenturer for other, south-western merchants. The latter merchants formed a second group of traders, characterised by their involvement in not only salt, but also a variety of other commodities, and by the fact that they were not associated with the physical business of coasting. A third category consisted of merchants from or linked with the local ports of clearance. These were mainly traders operating out of the Severn ports, who traded regular shipments of salt and more general cargoes of miscellaneous goods. Lastly, and most commonly, was the combined master and merchant who usually operated a single trow or vessel out of the Severn ports, Liverpool or Bridgwater. The 'master-merchant' nominally traded on his own account, occasionally being freighted by a separate merchant who appeared in the Port Books as responsible for the cargo. However, many of these traders acted solely as agents and carriers - the physical facilitators of a higher level of mercantile activity that

Table 5.5: Merchants importing rock salt (in tons) coastally to Bridgwater, 1695-1703.

Year	*Merchant*	*Port*	*Qt.*	*Voy.*	*Mean*	*Year*	*Merchant*	*Port*	*Qt.*	*Voy.*	*Mean*
1695	Alloway	LVR	16.85	1	16.85	*1699*	Blackburn	LVR	150.83	4	37.71
	Farrar	LVR	11.00	1	11.00		Houghton	LVR	128.02	3	42.67
	Neale	LVR	10.50	1	10.50		Hoare +Co	LVR	94.56	2	47.28
	Currant	LVR	8.40	1	8.40		McMullen	LVR	61.47	1	61.47
	Higginson	LVR	5.50	1	5.50		Cockrem	LVR	39.18	1	39.18
	Cockram	LVR	3.30	1	3.30		Heard	LVR	36.57	1	36.57
	Holmes	LVR	0.30	1	0.30		Smith	LVR	36.57	1	36.57
			55.85	7	7.98		Hambridge	LVR	34.74	1	34.74
							Parr	LVR	30.47	1	30.47
1696	Johnson	LVR	161.03	3	53.68		Vinecott	LVR	26.64	1	26.64
	Warburton	LVR	116.98	2	58.49		Haydock	LVR	25.60	1	25.60
	Currant	LVR	101.06	2	50.53		Murren	LVR	24.40	1	24.40
	Elworthy	LVR	50.62	1	50.62		Nurton	BRS	21.00	2	10.50
	Hyde	LVR	40.49	2	20.25		Fleming	BRS	12.00	1	12.00
	Holmes	LVR	26.00	1	26.00				722.05	21	34.38
	Higginson	LVR	15.45	2	7.73						
	Bailey	GLC	14.00	1	14.00						
	Baldwin	LVR	13.50	1	13.50						
	Alloway	LVR	11.25	1	11.25						
	Venicott	LVR	10.50	1	10.50	*1701*	Nickson	LVR	197.32	3	65.77
	Claroe	GLC	10.00	1	10.00		Edgar	LVR	156.01	3	52.00
	Heard	LVR	3.65	1	3.65		Slyford	LVR	105.36	3	35.12
	Cockrem	LVR	3.31	1	3.31		Vinecott	LVR	55.11	1	55.11
	Burnall	LVR	2.00	1	2.00		Johnson	LVR	54.90	1	54.90
	Goodson	LVR	0.50	1	0.50		Hambridge	LVR	37.76	1	37.76
			580.34	22	26.38		Rymer	LVR	31.70	1	31.70
							Perkes	GLC	7.06	2	3.53
1697	Parr	LVR	69.04	1	69.04				645.23	15	43.02
	Dashwood	LVR	61.57	1	61.57						
	Voss	LVR	60.95	2	30.48						
	Baldwin	LVR	54.10	1	54.10						
	Currant	LVR	33.74	1	33.74						
			279.41	6	46.57						
1698	Hoare +Co	LVR	106.96	2	53.48	*1703*	Cleaveland	LVR	229.66	4	57.41
	Hyde	LVR	56.72	1	56.72		Edgar	LVR	101.04	2	50.52
	Wheeler	LVR	52.65	1	52.65		Brockenbroug	LVR	88.80	2	44.40
	Alloway	LVR	43.44	1	43.44		McMullen	LVR	44.17	1	44.17
	Vinecott	LVR	37.49	1	37.49		Row	LVR	29.89	1	29.89
	Houghton	LVR	33.96	1	33.96		Johnson	LVR	29.54	1	29.54
	Parr	LVR	30.53	1	30.53		Perkes	GLC	5.69	1	5.69
			361.76	8	45.22				528.79	12	44.07

Table 5.6: Merchants importing salt and white salt (in tons) coastally to Bridgwater, 1695-1703.

Year	*Merchant*	*Port*	*Qt.*	*Voy.*	*Mean Shipment*	*Year*	*Merchant*	*Port*	*Qt.*	*Voy.*	*Mean Shipment*
1695	Higginson	LVR	181.53	3	60.51	*1697*	Fisher	CRD	7.00	1	7.00
	Holmes	LVR	121.68	3	40.56	*(cont.)*	Parr	LVR	4.28	1	4.28
	Alloway	LVR	93.93	2	46.97		Baldwin	LVR	2.29	1	2.29
	Heard	LVR	75.43	2	37.72		Beale	GLC	2.00	1	2.00
	Neale	LVR	64.63	2	32.32		Dashwood	LVR	1.91	1	1.91
	Farrar	LVR	57.69	1	57.69		Chance	GLC	0.38	1	0.38
	Unknown	LVR	48.55	1	48.55				713.28	31	23.01
	Parr	LVR	47.53	1	47.53						
	Cockrem	LVR	43.52	1	43.52	*1698*	Oakes	GLC	220.00	6	36.67
	Current	LVR	35.81	1	35.81		Corker	GLCBRS	137.78	8	17.22
	Taylor	LVR	17.33	1	17.33		Jackson	GLC	116.00	3	38.67
	Corker	GLC	2.50	2	1.25		Powell	GLC	98.00	3	32.67
	Scorch	BRS	0.50	1	0.50		Vinecott	LVRCHS	49.29	2	24.64
	North	SWN	0.15	1	0.15		Bailey	GLC	40.00	1	40.00
	Austin	SWN	0.10	1	0.10		Chance	GLC	39.50	1	39.50
			790.87	23	34.39		Claroe	GLC	38.00	1	38.00
							Hooper	GLC	35.00	1	35.00
1696	Higginson	LVR	194.26	3	64.75		Alloway	LVR	20.29	1	20.29
	Neale	LVR	152.49	3	50.83		Houghton	LVR	10.89	1	10.89
	Hyde	LVR	96.39	3	32.13		Hoare +CO	LVR	0.60	1	0.60
	Cockrem	LVR	92.14	2	46.07		Hyde	LVR	0.19	1	0.19
	Corker	GLC	78.70	6	13.12				805.54	30	26.85
	Holmes	LVR	65.13	2	32.57						
	Heard	LVR	60.25	1	60.25	*1699*	Corker	GLC	129.00	5	25.80
	Baldwin	LVR	53.59	1	53.59		Jackson	GLC	75.00	2	37.50
	Alloway	LVR	47.72	1	47.72		Oakes	GLC	71.00	2	35.50
	Goodson	LVR	44.08	1	44.08		Powell	GLC	57.50	2	28.75
	Currant	LVR	43.35	2	21.67		Vinecott	CHS	37.50	1	37.50
	Venicott	LVR	38.64	1	38.64		Clark	GLC	34.00	1	34.00
	Methwen	CHS	37.50	1	37.50		Holwell	MNH	27.00	1	27.00
	Powell	GLC	36.00	1	36.00		Hooper	GLC	22.00	1	22.00
	Brewer	NTH	35.00	1	35.00		Craig	LVR	16.13	1	16.13
	Burnall	LVR	30.67	1	30.67		Beale	GLC	5.00	1	5.00
	Ranes	LVR	28.71	1	28.71		Hoare +CO	LVR	1.10	1	1.10
	Claroe	GLC	28.66	3	9.55		Houghton	LVR	0.84	1	0.84
	Fisher	LVR	20.92	1	20.92		Blackburn	LVR	0.64	2	0.32
	Fisher	GLC	20.25	2	10.13		Murren	LVR	0.50	1	0.50
	Perkes	GLC	18.00	1	18.00				477.20	22	21.69
	Bridges	BRS	2.29	1	2.29						
	Elworthy	LVR	2.03	1	2.03	*1701*	Perkes	GLC	238.55	11	21.69
	Warburton	LVR	1.84	1	1.84		Corker	GLC	82.01	3	27.34
	Johnson	LVR	1.53	2	0.76		Hall	GLC	47.35	1	47.35
	Load	GLC	0.75	1	0.75		Hooper	GLC	40.00	1	40.00
			1230.89	44	27.97		Bickham	LND	3.00	1	3.00
							Davis	BRS	2.30	1	2.30
1697	Corker	GLC	180.68	7	25.81				413.21	18	22.96
	Powell	GLC	149.00	6	24.83						
	Currant	LVR	81.89	2	40.95	*1703*	Corker	GLC	311.20	12	25.93
	Voss	LVR	59.75	2	29.88		Perkes	GLC	194.30	10	19.43
	Griffiths	LVR	54.94	1	54.94		Tyler	GLCNWN	102.28	5	20.46
	Cockrem	LVR	52.09	1	52.09		Beale	GLC	67.43	5	13.49
	Holmes	LVR	47.81	1	47.81		Claroe	GLC	35.14	1	35.14
	Bailey	GLC	30.00	1	30.00		Belsham	GLC	27.18	1	27.18
	Jackson	GLC	20.00	1	20.00				737.52	34	21.69
	Claroe	GLC	19.25	3	6.42						

connected Cheshire and Droitwich producers with consumers and traders in Bridgwater.

This classification emphasises the limitations of Port Book evidence. For example, some of the merchants shipping salt from Liverpool especially may have acted as supercargo for other merchants. In fact, the Tables reveal the recording of merchants to be a flexible affair - at least as far as the legal requirements of the Exchequer were concerned. Officials were more interested in establishing fiscal liability for the cargo should it be adulterated or traded overseas illicitly than determining who advanced the capital for or ultimately owned the salt. This is demonstrated by the number of salt proprietors and refiners from Cheshire and Liverpool noted as merchants or indenturers in the Bridgwater Books. Men such as Thomas Johnson of Liverpool, the renowned MP, overseas merchant, joint 'proprietor of rock salt near Nor[th]wich', and the Dungeon works at Liverpool, Robert Hyde of Sutton, Henry Parr of Liverpool, or Sir Thomas Warburton of Liverpool were often obliged to extend credit to more distant merchants by securing the Customs bond at Liverpool or its creek Frodsham and paying excise duties liable on salt shipped coastally themselves.[86] This arrangement was fairly typical. Asked to account for the loss of 101 bushels of rock salt amongst a cargo of 1,065 bushels shipped from Liverpool to Bristol in 1703, Richard Says, master of the *Griffin* 'of and belonging to Brockweir' and his boatswain, Thomas Hodges revealed a similar system by which salt was traded and recorded by Customs clerks. Says swore that the discrepancy between the full coquet and excise documentation and the amount discharged at Bristol was due to inundation of the cargo during a thirty hour storm off St. David's Head. Duty (and apparently the customs bond) had been secured by 'Mr Cleeveland of Leverpoole ... proprietor of rock salt', but the cargo was shipped 'on the proper account and risque' of Stephen Baker, merchant of Bristol.[87] In the corresponding Liverpool coastal Port Book John Cleaveland was named as the sole merchant. Cleaveland was also recorded as merchant on four voyages carrying over 229 tons of rock salt from Liverpool to Bridgwater in 1703, and, although Says' precise

association with the salt is more obscure, he and the *Griffin* were also involved in one shipment.

Many salt proprietors were also independent merchants in their own right. This may account for the presence of Jonathan Blackburn, a 'gentleman refiner of Flintshire' who had salt works at Liverpool and salt mines and pans at Northwich by the early eighteenth century. In 1699, Blackburn shipped over 150 tons of rock salt and rather less than a ton of white to Bridgwater in four shipments undertaken by Liverpool boats.[88] Similarly, Jeffrey Houghton, later of Nantwich and lessee of the New Witton salt works, acted as merchant on two voyages carrying over 128 tons of rock and less than a ton of white, whereas Robert Haydock of Liverpool was also responsible for a single cargo of 25.6 tons of rock salt in 1699.[89] In 1701, four salt proprietors and merchants, Thomas Nixon, Thomas Edgar, Thomas Johnson and Thomas Slyford - the latter by this time heavily involved in rock interests in Cheshire, the navigation of the Weaver, and in several refineries - accounted for over three quarters of all rock shipped into Bridgwater.[90] Similarly, shipments of rock salt merchanted by Cleaveland, Edgar, Samuel Brockenbrough,[91] and Johnson comprised 86% of the quantity imported coastally in 1703.

Bridgwater merchants were more apparent in the Port Book record in the earlier years of the sample. These included William Alloway and his associate Alexander Holmes who were most active between 1695 and 1699. Also involved in the salt trade were merchants such as Isaac Heard, Michael Currant, William Methwen, and Samuel Burnall who were associated formally or more peripherally with Hoare and Company, itself explicitly noted as an importer of rock and white salt coastally in 1698 and 1699. 'Independent' merchants were less well represented and were largely involved in one-off voyages: Thomas Holwell for example occurred as merchant on only one occasion, a letpass voyage from Minehead in 1699. These merchants were far outweighed by the combined master-merchant: regular traders such as Charles Corker of Bewdley, Giles Vinecott and Philip Cockrem of Bridgwater, and James McMullen of Liverpool who were recorded in the Port Books

as merchanting their own shipments. In addition, the odd small shipment of salt was carried by the regular Bridgwater 'packets' that traded with Bristol, although, as with the activity of merchant-masters, it is impossible to establish who controlled the salt carried without additional evidence.

These types of relationship are more fully explained when the accounts of Hoare and Company are examined in detail. Salt formed the commercial backbone to the Company's business. Its primary interest in the coastal trade stemmed from the need to convey salt as cheaply as possible from source to the Company's own factory and fishery and also to its many agents and clients throughout the south-western peninsula. In this Hoare and Company probably acted in a similar way to many merchants in most ports in the south west and Wales. Salt dwarfed the Company's other commercial interests. Even the highly lucrative and occasionally remunerative transatlantic voyages, were speculative concerns financed by the continued profitability of the domestic salt trade. Therefore, the activity of the Company between 1696 and 1699 can be seen as providing an effective case study of the wider levels of mercantile activity.

Although the Company's accounts do not effectively begin until May 1696, it is clear that three vessels in which it held substantial shares had already been freighted to Liverpool for rock and white salt. Thus, in January the *Providence* of Bridgwater, mastered by John Neale, and the *Mary and Elizabeth* of Liverpool under John Higginson, 'master and one quarter owner' cleared Bridgwater. Higginson and Neale, however, appeared as merchants to the vessels when they discharged their cargoes in Bridgwater later in April.[92] The salt from both vessels was then sold directly to local and provincial dealers.[93] In February, the *Blessing* of Bridgwater was also dispatched under its 'master and half owner', John Pettitt, returning to the port with salt in May with Samuel Burnall appearing in the coastal Port Book as merchant.[94] In addition, Philip Jefferies was contracted to ship 2,410 bushels and 5 lb of white salt (60.25 tons) and 3 tons, 13 cwt rock 'att 7d per bushell on our account as per Mr Hyde's charge' in his vessel the *True Love* of Bideford. The vessel arrived in Bridgwater in June, with

Isaac Heard, a partner in the Company, recorded as merchant.[95] It is also probable that the Company freighted another three voyages to Liverpool before the beginning of the accounts. These shipments were undertaken in the *Blessing*, the *Exchange*, and the *Hannah*, boats part-owned or regularly chartered by the Company. However, no direct evidence exists to determine whether the Company was involved.[96]

The activities of the Company become more apparent from May 1696 when shipments are recorded more fully in the Letter Book. By the end of the month, Michael Currant's ship the *Hannah* of Bridgwater, five-twelfths owned by the Company, had proceeded to Frodsham and been loaded with white salt procured from Thomas Hyde of Middlewich and Thomas Minshall of Erdswick. Despite problems connected with excise payments and scarcity of supplies (occasioned by lack of coal and labour), Currant returned to Bridgwater on 12 June.[97] During this month, the Company freighted the *Exchange* and the *Providence*, both of Bridgwater, and mastered by Philip Cockrem and John Neale respectively. The vessels were loaded with salt at Frodsham, Thomas Webb supplying Cockrem, and Hyde, Neale. Their cargoes were discharged at Bridgwater by mid-July.[98] A hiatus in the production of salt in Cheshire and a glut of coasters awaiting loading, combined with contrary winds and the threat of privateers, seriously delayed two more of Hoare and Company's ships. The *Blessing* and the *Mary and Elizabeth*, under Pettitt and Higginson, had reached Liverpool by 19 June. However, both owners had to wait until August before they cleared; Pettitt with white salt from Hyde and Higginson with white from Webb.[99] A further six voyages to the Mersey estuary were undertaken in boats owned or chartered by the Company in 1696. The *Mary* of Bridgwater, mastered by John Page and the *Hannah*, again under Currant, were ordered to load over 95 tons of rock salt from Warburton at Frodsham.[100] Although Currant intended to seek a market for his quarter share in south Wales, he discharged the whole cargo at Bridgwater, selling his share and 'portlage' salt to the Company. The *Hannah* was promptly sold to John Palmer after its unloading.[101]

In September, Robert Hyde shipped on board the *True Love* of Bridgwater,

mastered by Hugh Baldwin for the Company, just under 2,143 bushels of white salt at Frodsham Bridge. A further loading of rock salt was supplied by Warburton when the vessel cleared from Liverpool on 8 October.[102] At the same time, the *Betty* of Watchet, mastered by Robert Dashwood was also dispatched by Warburton with rock salt. This arrived at Bridgwater in late November with 55 tons of rock and smaller amounts of white: Warburton acted as the named merchant.[103] In addition, after a notably unsuccessful voyage with coals and glass to Dublin in the *Providence*, John Neale procured a loading of white salt from Webb, the vessel departing from Liverpool on 20 October.[104] After severe weather off Beaumaris had damaged the vessel and caused some inundation of its cargo, Neale discharged 1,936 bushels and 13 lb of salt at Bridgwater in December.[105] The last voyage undertaken by the Company and completed in 1696, involved John Higginson, once more merchanting the *Mary and Elizabeth.* Higginson loaded 2,585 bushels of Middlewich white salt from Webb at Frodsham and also shipped another 20 cwt from 'Mr Ludlow ... a projector, who said he had an order to put it on board ... for the Company's use and risque'.[106] Beset with similar difficulties to Neale, Higginson finally discharged his salt on 14 December.[107]

In 1696, the Company also sought to develop its trade in Droitwich salt. From September, five shipments of salt were freighted through Gloucester, using the *Providence* of Bewdley, under Charles Corker, and Thomas Claroe's trow, the *Thomas* of Upton, mastered on a regular basis by William Jefferies. The shipments were organised by John Padmore of Broadwater near Kidderminster and brokered by the Company's agent, Richard Lowbridge.[108] This salt may have been acquired from Edward Wheeler, a Droitwich salter, who was occasionally mentioned in Lowbridge's dispatches and was associated with shipments undertaken by Corker.[109] The first recorded shipment of almost 18 tons of salt 'made in leaden pans' was shipped on the *Providence*, merchanted by Perkes. This suggests that the Company's initial supplies were not produced using coal fired technology which has been seen as 'in general use by the period of great expansion in the 1690s'.[110] A further consignment from

Lowbridge and Padmore followed in the *Providence* and another 20 tons was transported on board the *Thomas* which arrived in early November.[111]

However, the first trials of Droitwich salt appear to have met a decidedly lukewarm reception from the Company's local customers, more accustomed to the 'small, heavy salt' of Cheshire. According to Padmore, Droitwich salt was 'as keen and dry a white salt as any is made in Cheshire, and such as I have formerly sold from Namptwich and Middlewich to Bridgwater'. Although salt of a greater grain was 'made at severall places at the sea side on salt rock and sea water', Padmore's salt, he repeatedly assured the Company, was manufactured from 'the strongest brine' making 'bigger grain salt than ever was made in this Country before' and would more than suffice the needs of their agents and chapmen. As a result, Padmore proposed to supplement Lowbridge's initial agreement by taking 'all [the salt] that the iron pans make' if the Company so desired. This new contract would provide salt 'as well dryed and as big graine as the brine will make' and would amount to around '30 or 40 ton each spring [tide]' consigned in '2 or 3 vessells'.[112]

The efficacy of Droitwich salt for not only the local and Newfoundland fisheries but also for industrial uses throughout the south-west appears to be born out by the increasing velocity of trade between Gloucester and Bridgwater. From this date, Hoare and Company regularly received consignments of Droitwich salt from Padmore and Lowbridge often directed through George Perkes and his trowman, Charles Corker. Thus, the *Prosperity* with Corker on board entered on 18 November carrying 25 tons of white salt which were sold ten days later.[113] The boat returned with another consignment of 20 tons on 8 December, the Company dispatching moneys to cover Padmore's excise payment (via George Perkes) when the trow, with Corker as the recorded master and merchant, finally cleared Bridgwater on 15 December.[114]

Hoare and Company also bought up supplies of salt brought coastwise by other merchants. For example, on 21 July 1696, Richard Chinn of Newnham was paid £125 4s for 20 tons and 14 cwt of Cheshire white salt 'received of him out of the

Endeavour, William Williams, master'. The Port Book reveals that the vessel had entered Bridgwater on 16 July.[115] Similarly, in June 1696, William Methwen and Thomas Musgrave had freighted the *Speedwell* of Bridgwater to load white salt from Thomas Partington's works at Flint.[116] The vessel, mastered by John Vinecott, cleared Chester in July eventually entering Bridgwater in October with 1,500 bushels (37.5 tons) of salt on board. However, by this time the Company had entered into a bargain with Methwen for his three-quarter share in the loading, and disposed of the cargo as soon as it broke bulk. The Company later purchased the *Speedwell* and her fittings outright from Methwen on his admittance to the partnership.[117]

Hoare and Company's apparently voracious appetite for salt brought coastally continued in 1697, although the reliance upon supplies from Liverpool was not as pronounced. This was due in part to the greater uptake of Droitwich salt and in part to the Company's not altogether successful decision to try to exploit the reported deficiency of salt along the south coast of Cornwall and Devon. Cockrem, on board the *Exchange* loaded with over 1,748 bushels (43.76 tons), was fairly unenthusiastic about making the dangerous and costly trip around Land's End in winter, even though the decline of Lymington sea-salt - the wet summer having 'prejudissed their pickle' - suggested lucrative returns.[118] Cockrem was followed by Samuel Burnall, captain of the *Blessing*,[119] John Higginson, master and acting supercargo of the *Mary and Elizabeth*,[120] and John Neale aboard the *Providence*.[121] All four shippers found extreme difficulty in off- loading the Company's salt. Cockrem bargained at a loss at Truro, Falmouth and eventually St. Ives,[122] whilst Burnall, Higginson and Neale, despite actively seeking buyers in the ports and inland market towns around Falmouth, Fowey, Plymouth and Dartmouth, were undermined in their efforts by local sharp practice. The 'constant rumour of a peace [with France]' also dissuaded traders from acquiring domestic supplies and the Company had to settle at rates far below what they had expected.[123]

The employment of four of the Company's regular traders on these long-distance coasting enterprises meant that only five voyages from Liverpool direct to

Bridgwater were completed in 1697. The coastal Port Books reveal that in February, Robert Dashwood in the *Betty* of Bridgwater entered Bridgwater on 16 April with rock and white salt (loaded from Thomas Warburton),[124] and the following month Michael Currant's new vessel, the *Michael* of Bridgwater, discharged a cargo of over 52 tons of salt.[125] The *Hope* of Bridgwater with Nicholas Griffiths on board arrived at Bridgwater with almost 55 tons of white salt for the Company in September and the *Michael*, with Currant as merchant and Sebastian Llewellyn as master, entered with over 29 tons of white and 33 tons of rock salt in October.[126] The final voyage saw Cockrem's *Exchange* carrying white salt break bulk in Bridgwater on 2 December.[127] In addition, the Company may have had interests in two further shipments mastered by Higginson. Both its old vessel, the *Hannah*, and the *Rebecca* of Liverpool made voyages from Liverpool, although there is no evidence tying the consignments they carried specifically to the Company.

Any shortfall of supplies from Cheshire and Liverpool was more than compensated by the expansion of the trade in Droitwich salt. In 1697, Hoare and company freighted twelve of the twenty shipments recorded entering Bridgwater from Gloucester. Much of this salt was contracted from Lowbridge and Padmore at £5 5s per ton and shipped on board Corker's trows, the *Prosperity* and, from August, the *Success* of Bewdley. Corker completed roughly a voyage each month for the Company between January and August delivering in all over 183 tons of salt, being paid £8 freight for every 20 ton delivered.[128] The Company also chartered Thomas Claroe and the *Thomas* of Upton on three separate occasions. However, by this stage, Claroe was shipping mostly corn and wool on behalf of the Company, and the consignments of salt were, as in 1696, small in comparison to those carried by Corker.[129]

However, the Company's final shipment of Droitwich salt in 1697 represented a commercial departure. On 16 December, Edward Jackson on board the *Charles* of Bridgnorth entered Bridgwater carrying 20 tons of salt for the Company, which was sold at 1.5 cwt overweight to its regular agents.[130] This salt was received directly

from Robert Steynor, the salt proprietor responsible for the breaking of the old Droitwich monopoly, and by 1697 among the most prominent of the Worcestershire salters.[131] As Dr. Wanklyn has intimated, the use of a vessel of distant Bridgnorth, hardly proximate to the Worcestershire salt field, demonstrates the strong familial association between individual trow owners and the salt trade that was to characterise river trade in the eighteenth century. Jackson's solitary voyage in 1697 marks the start of the close association the family were to enjoy in the long distance shipment of salt with Bridgwater, and the principal motivation for moving their operation permanently to Worcester, the main salt-shipping river centre.[132]

Steynor and Jackson were to supply a further 94 tons and 18 cwt of Droitwich salt to the Company in 1698. This was completed in three successive voyages of the *Charles* of Bridgnorth between January and April 1698, Jackson shipping Cheshire cheese and other sundries on his own account.[133] Steynor was also involved in a shipment of 39.5 tons of white salt delivered at £5 15s per ton in March, conveyed in the *Thomas* of Worcester, with John Chance recorded as the Port Book master and merchant.[134] Steynor's activities, however, were outweighed by the amounts Padmore and, from November, his associate Robert Hall consigned to the Company via Charles Corker. Corker's trows, the *Prosperity* and the *Success* of Bewdley, were freighted from Gloucester on every convenient spring tide and took whatever salt Padmore had ready. This accounts for both the variable size of the consignments that reached Bridgwater in 1698, and consequently the low mean tonnage of salt per shipment as revealed in Table 5.5. Even so, 137.78 tons were delivered to the Company by Corker in the year. The first two shipments in February and March discharged 40 tons of salt,[135] and a further 16 tons were traded via Bristol in August. However, Padmore's salt was increasingly being undercut by the aggressive marketing of salt delivered 'at very low rates' from Sir Robert Throgmorton's works at Droitwich to local traders. The Company's response was to persuade Padmore to renegotiate his contract by emphasising the relative cheapness of other forms of supply and by dangling the financial carrot of not only renewing the agreement to supply fifty tons,

but also doubling it if required.[136] Meanwhile, Corker had delivered the last of the old contract arriving in Bridgwater with 20 ton of salt on 31 August.[137] A further two consignments were dispatched by Padmore in 1698 and a single shipment of 10 tons of clod salt, a concentrated salt held in high repute for bacon and cheese making, was delivered by Corker from Thomas Herbert in November.[138]

In addition, the Company was active in acquiring salt brought to Bridgwater by other merchants. In response to Hoare's order to engross as much salt as possible, 20 tons, 9 cwt was bought from a loading of 38 tons shipped by 'owner' Thomas Claroe on the *Thomas* of Upton in May 1698.[139] Another 37 tons 14 cwt was also obtained from a 'Mr Smith' by 26 July. Although the vessel from which this was taken was not specified, the salt was probably shipped on board the *Elizabeth* of Tewkesbury, which had discharged at Bridgwater six days earlier.[140] More enterprisingly, the Company contracted with Throgmorton and Norris, salt producers in Worcestershire, to buy 95 tons of salt.[141] In September, 40 tons of salt carried on the *William* of Bridgnorth was purchased from 'Mr Robert Bobbet and received out of William Oakes' trow, it being a parcel of salt Mr Bobbett bought of Sir Francis Throgmorton's steward'.[142] This was followed by further shipments by the *William*, mastered by John Clarke, with Oakes acting as supercargo for salt delivered to him by William Norris. On 19 October, the Company took delivery of 16 tons 3 cwt of salt from the 33 tons shipped by Oakes and Clarke and a further 15 tons 5 cwt that entered the port by this means on 2 December.[143] This, however, represented a poor return: the Company was 'streightened for the rest' of the salt; Galpine found the consignments very 'short on weight' and was forced to warn William Norris that, if freight could not be arranged as cheap as that afforded by Perkes (and Corker) at 9s per ton, the deal was off. None the less, a further 40 tons 'or at least 30 ton' was ordered for the next spring tide the following year.[144]

The absence of the Company's main fleet abroad in 1698 curtailed its long-distance coasting activities.[145] None the less, five voyages were completed, three of which were undertaken by the *Speedwell*, mastered by Giles Vinecott. In April,

Venicott landed a cargo of white and rock salt loaded by William Hyde, and returned to Liverpool as 'purser' to load 1,008 bushels (54 tons) of rock and a small quantity of white for Hoare.[146] Thereafter the vessel was dispatched to Chester to load white salt at Partington and Massey's works at Flint in August. After several delays and an abortive trip to Frodsham, the *Speedwell* cleared Chester in October.[147] In addition, the Company received rock salt from William Hyde on board the *Mary*, which discharged at Bridgwater in September 1698. Hyde acted as the merchant for customs purposes on the voyage. Also the *Friendship* under Joseph Cross brought back almost 53 tons of rock salt from Hyde's works after freighting Tenby coals to Dublin and yarn to Liverpool. Hoare was recorded as merchant for the shipment in both the Liverpool and Bridgwater Port Books for this voyage.[148]

The decline in the extant company records during 1699 render the reconstruction of the Company's salt business more problematic. Thus, although it is clear that the contracts with Padmore and Norris for Droitwich salt were upheld, it becomes increasingly difficult to ascertain how salt purchased in this way was brought to Bridgwater. The two shipments made in William Oakes' trow the *William* of Bridgnorth in January and February almost certainly were undertaken in completion of the bargain struck with Norris in 1698.[149] In total 68 tons were carried under the Company's account by Oakes and his regular master, John Clarke. Oakes also delivered a further 37 tons of white salt for the Company on the *Francis* of Bridgnorth, again navigated by Clarke, which entered Bridgwater on 22 May. This was almost certainly the final consignment of salt sent by Norris.[150] In March, the Cash Book reveals that the Company also received a loading of 22 tons of white salt from John Hooper, master of the *Samuel* of Upton.[151]

Charles Corker continued to deliver salt ordered from Padmore and his partner Robert Hall.[152] 20 tons of white salt were dispatched via Corker on the *Prosperity* on 4 April arriving three days later.[153] Despite this, the Company contracted with Hall and Penrice of Droitwich to supply a further 100 tons of 'merchantable white salt, large grayn, made in iron pans' from Michaelmas 1699, 'that is to say 20 tons unto 25,

the beginning of every month untill the bargaine is compleated'.[154] Corker completed three voyages before the new contract was enforced. On 5 July he discharged 5 tons of white salt from the *Success*, merchanted by John Beale. The *Success* returned under Corker as merchant and master on 19 August with 40 tons and was again in Bridgwater on 21 September with an additional 35 tons. Thereafter, Corker made two more voyages, one on board the *John and Mary* of Bewdley entering the port on 18 October with 20 tons, and a final 12 tons on the *Success* which broke bulk on 21 November. It is highly likely that Hoare and Company was also involved in the two voyages undertaken by Jackson on the *Prosperity* of Bridgnorth towards the end of the year, although this cannot be confirmed due to the deficiencies in the Company's record.

For the same reasons, evidence of Hoare and Company's interests in Cheshire salt in 1699 is limited. For much of the year, the fleet was abroad and it is only possible to firmly identify six voyages freighted for the company from Liverpool and Chester. On 2 February, Michael Currant brought home the *Hope* with rock and white salt loaded by Robert Hyde. Hoare appeared as the named merchant in the Port Book entry.[155] Two days later the *Elizabeth* of Bideford, freighted by Isaac Heard, entered Bridgwater with a cargo of rock salt, presumably for the Company.[156] At this time the *Speedwell* under John Vinecott was dispatched to Partington and Massey. Despite much confusion over whether to ship or warehouse old duty rock salt stored for the Company, the *Speedwell* returned to Bridgwater in May with 1,500 bushels (37.5 tons) of white salt from Chester.[157] Also in May the *Mary and Elizabeth* with John Vinecott acting as master and merchant reached Bridgwater after loading rock with Robert Hyde.[158] The Company's final two 'return' shipments to Liverpool in 1699 were in the *Michael* skippered by Michael Currant, with Hoare and Company specified as the merchant in the Port Book manifest, and the *Exchange*, mastered and merchanted by Philip Cockrem. In June, the vessels discharged over 90 tons of rock salt which had been acquired by the Company before the imposition of the new duty.[159] Two more of the Company's ships, the *Fly* and the *Mary*, also collected salt

at Liverpool in 1699, although they were ordered to discharge at Ilfracombe and in Ireland respectively.

By mid-1699 the Company's need to secure supplies of rock salt before the proposed Salt Act 'be brought into the hous', prompted Galpine to scour the Bristol market.[160] As a result, Edward Hackett, the Company's Bristol factor, consigned 15 tons on board 'Offield's bark', the *Isaac and John* of Bridgwater, on April 6. The vessel arrived at Bridgwater two days later with Robert Nurton acting as master and merchant. A further 6 tons purchased by Galpine and Hackett was also sent on the *Isaac and John* in June, before the Company's temporary shortage of rock salt was met by the cargoes discharging from Liverpool.[161]

The activity of Hoare and Company is not recorded after 1700. However, an examination of Tables 5.5 and 5.6 reveals similar patterns of organisation were in place in both 1701 and 1703. This was especially so amongst those merchants and masters recorded shipping Droitwich salt to Bridgwater. The fact that traders such as Corker and Perkes continued to be prominent in the trade suggests that the contractual arrangements discussed above were still in force, although they were almost certainly not organised under the aegis of the Company. Corker accounted for 82.01 tons in three shipments in 1701 and 311.2 tons in 12 voyages in 1703. He also chartered John Bassett to carry an additional 25.25 tons (1,010 bushels) on board Corker's usual vessel, the *Blessing* of Bewdley. In addition, Corker was apparently freighted by other Severn-based merchants and factors. In 1703 he carried 37.43 tons (1,497 bushels) for John Beale and mastered the *Success* and the *Joseph and Benjamin*, both of Bewdley, on 7 voyages to Bridgwater transporting 137.3 tons (5,466 bushels, 13 cwt) on behalf of George Perkes.

In the four years in which an impression of the Company's interests can be reconstructed, salt was without doubt the principal traded commodity. Table 5.7 summarises the control Hoare and Company exerted over supplies of white and rock salt brought coastally to Bridgwater in this period. Only in 1699, when the record is incomplete, did the Company fail to control half or more of the total amount of salt

Table 5.7: Coastal imports of white and rock salt (in tons) to Bridgwater, 1696-1699, organised by Hoare and Company.

White Salt

		Gloucester	*Liverpool*	*Others*	*Total*
1696	*qt*	182.36	973.74	74.79	1230.89
	hoare	117.78	640.58	37.50	795.86
	% hoare	65	66	50	65
1697	*qt*	401.31	304.96	7.00	713.27
	hoare	211.93	190.83	-	402.76
	% hoare	53	63	-	56
1698	*qt*	704.90	46.26	54.78	805.94
	hoare	385.03	15.08	35.00	435.11
	% hoare	55	33	64	54
1699	*qt*	393.50	19.20	64.50	477.20
	hoare	261.00	1.10	37.50	299.60
	% hoare	66	6	58	63

Rock Salt

	Gloucester	*Liverpool*	*Bristol*	*Total*	*Total Salt*
1696	24.00	556.34	-	580.34	1811.23
	-	250.68	-	250.68	1046.53
	-	45	-	43	58
1697	-	279.41	-	279.41	992.68
	-	95.31	-	95.31	498.07
	-	34	-	34	50
1698	-	361.76	-	361.76	1167.70
	-	201.17	-	201.17	636.28
	-	56	-	56	54
1699	-	689.05	33.00	722.05	1199.25
	-	196.95	21.00	217.95	517.55
	-	29	64	30	43

Coastal shipments of white and rock salt to Bridgwater, 1696-1699, organised by Hoare and Company.

White Salt

		Gloucester	*Liverpool*	*Others*	*Total*
1696	*total*	14	27	3	44
	hoare	12	15	1	28
	% hoare	86	56	33	64
1697	*total*	20	10	1	31
	hoare	10	5	-	15
	% hoare	50	50	-	48
1698	*total*	23	5	2	30
	hoare	16	3	1	20
	% hoare	70	60	50	67
1699	*total*	14	6	1	22
	hoare	10	1	1	12
	% hoare	71	17	100	55

Rock Salt

	Gloucester	*Liverpool*	*Bristol*	*Total*
1696	2	20	-	22
	-	8	-	8
	-	40	-	36
1697	-	6	-	6
	-	2	-	2
	-	33	-	33
1698	-	8	-	8
	-	4	-	4
	-	50	-	50
1699	-	18	3	21
	-	5	2	7
	-	28	64	33

entering the port in any given year. This ascendancy was founded squarely on white salt. The Company consistently took over half the quantity of the commodity shipped coastally to Bridgwater. 1696 was the most productive year with almost three-quarters of the supply from Gloucester and Liverpool passing through Company hands. This does not include shipments undertaken in the first four months of the year which may have been organised by the Company but were not covered by the records. In total, almost 800 tons of white salt were traded on behalf of the Company in 1696, over 80% of which was Cheshire salt emanating from Frodsham and Liverpool. Thereafter, the Company, like most Bridgwater traders, concentrated upon Droitwich for its supplies of white salt. Between 1696 and 1699, the Company accounted for the lion's share of salt transported to Bridgwater via the Severn and by far the majority of shipments carrying the commodity. Although doubts existed concerning the strength of this salt, it could be freighted more cheaply and far more safely than supplies of Cheshire salt which faced the arduous and often perilous sea journey from the north west. In contrast, the Company became less reliant upon Cheshire rock salt, even though a steady running order of around 200 tons per year was maintained with proprietors such as Robert Hyde and Thomas Warburton. Again, trade in rock salt peaked early with a total of just over 250 tons being shipped in eight voyages in 1696. Much of this was destined for the Company's own salt works and pans at Ham Mills and Lynmouth. However, as the Company diversified its regional interests, the trade in rock salt became less focused on Bridgwater. Instead, rock salt was transported on a much larger scale to other areas, notably the fishery centres of the south coast of Cornwall and Devon and also Ireland. Here potential profits were higher, but the voyages were more speculative and the disadvantages involved in long distance trade - inclement weather and surly crews - even in optimum, peacetime conditions rose in proportion.

Hoare and Company were not the only Bridgwater merchants importing salt coastally at this time. A significant proportion of Cheshire white and rock salt was freighted by

William Alloway, a substantial overseas and domestic merchant, whose principal interests lay in wool shipped mainly from Ireland.[162] Alloway was also heavily involved in the inshore fisheries, acting as merchant to seven voyages carrying over 1,700 barrels of herrings from Ilfracombe to Bristol, Bridgwater and Minehead between June 1698 and June 1699. In addition, Alloway traded in large consignments of tobacco; in April 1699, over 20,000 lbs of Virginia tobacco were dispatched by Alloway to Gloucester on board Oakes' trow, the *William* of Bridgnorth, which had delivered salt for Hoare. Much of this tobacco had been consigned to Alloway by his friend and associate, Thomas Johnson of Liverpool.[163] However, as in the case of Hoare and Company, salt occupied a central role. By 1695 Alloway had interests in at least four independent salt works in Somerset and Cornwall and in 1697 he was refitting his principal works at Bridgwater with 'a salt pann, vates, and materialls'.[164] Later he enjoyed an informal but close association with the Company, owning a half-share in the Lynmouth fishery.[165]

Alloway's involvement in the salt trade was organised on two levels. Insofar as supply was concerned, his association with Johnson was vital. Johnson was the central figure in the mercantile community of Liverpool in this period and had several fingers in the white and rock salt trade. Alloway's salt consignments were invariably procured through Johnson who in turn was supplied with large quantities of grain, pulses and other agricultural goods sent coastwise from Somerset.[166] At a local level, Alloway entered into partnerships with merchants and ship-owners to freight salt. Thus, Alloway owned three-quarters of the *Willing Mind* of Bridgwater, the remainder being controlled by the boat's regular merchant, Alexander Holmes. Alloway also possessed a half-share in the *Satisfaction* of Bridgwater with John Wheddon, and a three- eighths share of the *Robert and Thomas* of Bridgwater with Thomas Musgrave, which appears to have been short-lived.[167] In addition, Alloway was the sole owner of the *Friendship* of Minehead, which was largely employed in the transoceanic and Irish trades. Like Hoare and Company, other vessels were freighted on an occasional basis.

The activity of William Alloway and associates between 1695 and 1699 is depicted in Table 5.8. Alloway is first encountered acting as merchant on the *Satisfaction* in 1695 with John Matthews as master. The vessel made two voyages from Liverpool in the year carrying just under 95 tons of white salt and almost 17 tons of rock before being captured by a French privateer in September.[168] Alloway's other boat, the *Willing Mind*, completed two voyages from Liverpool in August and November carrying a total of just under 122 tons of white salt and a very small amount of rock. On both occasions, the vessel was navigated by John Eaves with Alloway's partner, Alexander Holmes, appearing as merchant in the Port Books.[169] The sum of this trade accounted for just under a quarter of all supplies traded coastally to Bridgwater.

In 1696, however, the picture becomes rather less clear cut. In February, the *Willing Mind* carrying just over 44 tons of white salt in 564 barrels and a small quantity of rock salt discharged at Bridgwater. In the Port Book, John Goodson was noted as merchant with John Aymes the recorded master. However, from Alloway's accounts, only Goodson was contracted.[170] Two months later, the *Satisfaction* with Robert Dashwood on board delivered over 57 tons of rock salt of Thomas Johnson's loading: Johnson appeared as the merchant.[171] Also in April, Alloway and Thomas Musgrave freighted the *Robert and Thomas* of Bridgwater with Robert Anstice mastering the vessel. Anstice loaded 42.63 tons of rock and a minor quantity of white salt from Johnson who again stood surety as merchant.[172] In June, two shipments of predominantly rock salt were received from Alloway's regular coasters. The *Satisfaction*, navigated by Matthews and loaded and ostensibly merchanted by Johnson, and the *Willing Mind* loaded by Thomas Minshall, arrived under Holmes and John Diaper respectively in convoy with some of Hoare and Company's ships.[173] The same combination returned to Liverpool in August to be loaded by Johnson. However, problems with excise payment, the lack of good ready money, poor supplies of salt, and severe weather seriously delayed Holmes. The *Willing Mind* finally broke bulk in Bridgwater only in October.[174] At this time Alloway again freighted Anstice

Table 5.8: Coastal imports of white and rock salt (in tons) to Bridgwater, 1695-1699 organised by William Alloway.

White Salt					*Rock Salt*			
		Liverpool	Others	Total		Liverpool	Total	Total Salt
1695	*qt*	787.62	3.25	790.87	*1695*	55.85	55.85	846.72
	Alloway	178.11	-	178.11		17.15	17.15	195.26
	% Alloway	23	-	23		31	31	23
1696	*qt*	973.74	257.15	1230.89	*1696*	556.34	580.34	1811.23
	Alloway	186.48	-	186.48		234.02	234.02	420.50
	% Alloway	19	-	15		45	40	23
1697	*qt*	304.96	408.31	713.27	*1697*	279.41	279.41	992.68
	Alloway	107.56	-	107.56		60.95	60.95	168.51
	% Alloway	35	-	15		22	22	17
1698	*qt*	46.26	759.28	805.54	*1698*	361.76	361.76	1167.30
	Alloway	20.29	-	20.29		43.44	43.44	63.73
	% Alloway	44	-	3		12	12	5
1699	*qt*	19.20	458.00	477.20	*1699*	689.05	689.05	1166.25
	Alloway	-	27.00	27.00		30.47	30.47	57.47
	% Alloway	-	6	6		4	4	5

Coastal shipments of white and rock salt to Bridgwater, 1695-1699, organised by William Alloway.

White Salt					*Rock Salt*		
		Liverpool	Others	Total		Liverpool	Total
1695	*total*	18	5	23	*1695*	7	7
	Alloway	5	-	5		2	2
	% Alloway	28	-	22		29	29
1696	*total*	27	17	44	*1696*	20	22
	Alloway	7	-	7		7	7
	% Alloway	26	-	16		40	36
1697	*total*	10	21	31	*1697*	6	6
	Alloway	3	-	3		2	2
	% Alloway	30	-	10		33	33
1698	*total*	5	25	30	*1698*	8	8
	Alloway	1	-	1		1	1
	% Alloway	20	-	3		13	13
1699	*total*	6	16	22	*1699*	18	21
	Alloway	-	1	1		1	1
	% Alloway	-	6	5		6	5

in the *Robert and Thomas* to load salt with Robert Hyde. In the Port Books, however, Hyde appeared as the merchant and Thomas Fisher as the master: Anstice probably accompanied the shipment as supercargo.[175] A final voyage organised by Alloway in 1696 involved the chartering of Philip Voss in the *Ann and Sarah* of Milford. Voss, again supplied by Johnson with Alloway appearing as the named merchant, discharged almost 48 tons of white salt and 11.25 tons of rock in December.[176] Alloway and his partners, therefore, accounted for some 186.46 tons of white salt and a rather larger amount - fractionally over 234 tons - of rock salt in 1696. The latter formed 40% of the total traded to Bridgwater. More interestingly the combined coastal imports of Alloway and Hoare and Company reveal that in 1696 the local salt trade was effectively divided between the two groups of merchants: a minimum of 81% of all salt discharging coastally at Bridgwater was organised or controlled by these merchants.

1696 represented the high point of Alloway's involvement in the salt trade. Like Hoare and Company, he subsequently employed his vessels in potentially more lucrative areas: shipping salt to Ireland and the south coast of Devon; delivering Irish wool to Bridgwater and Minehead, staple ports for the Devonshire cloth industry; and engaging in the Virginian and Newfoundland trades. For much of 1697, for example, the *Willing Mind* was employed in a complex quadrilateral of trade, clearing Bridgwater in ballast for Milford; taking a cargo of culm from Milford to Dublin; thereafter transporting wool and linen to Liverpool; and finally shipping white salt from Liverpool to Topsham.[177] By 1699, the ship was trading to the West Indies.[178] None the less, Alloway still accounted for over 35% of the white salt and 22% of the rock salt clearing Liverpool for Bridgwater in 1697. This was carried in three voyages: the *Willing Mind* under Holmes discharged almost 48 tons of white salt in January, and the *Ann and Sarah*, with Voss acting as master and merchant, completed voyages in April and October transporting almost 61 tons of rock salt and 60 tons of white salt.[179]

By 1698, however, Alloway's interest in shipping salt directly to Bridgwater

had waned: only one voyage in which Anstice was freighted to carry rock and white on board the *Robert and Thomas* can be confidently ascribed to Alloway.[180] In 1699, only the *Prosperous* of Liverpool freighted by Henry Parr and mastered by James Norris unloaded rock salt for Alloway,[181] whilst a further 27 tons of white salt, landed at Minehead the previous year, were shipped on behalf of Alloway on board the *John and Ann* of Minehead, mastered by William Harding. This entered Bridgwater by letpass in February on the account of Thomas Holwell, one of Alloway's more regular general customers in Taunton.[182] Alloway continued to deal in salt throughout the period covered by his accounts, although by 1699 neither the Port Books nor his accounts detail the vessels through which supplies were being shipped.

Where did this salt go? Hoare and Company's Waste Book records the principal users, agents and carriers who purchased salt brought coastwise by the Company between May 1696 and December 1698. The 55 consumers who took a minimum of 1 ton of salt are presented in Table 5.9 together with the amount of salt still warehoused in 1698; the single shipment of 30 tons of white salt to Swansea; and a further 14 traders, who received less than 1 ton and jointly accounted for 4.89 tons in total. In Figure 5.2, the geographical extent of the Company's trade is compared to that reported for 'coles, culm and other merchandizes' allegedly dispatched by Richard Bobbett, a Bridgwater merchant operating out of Ham Mills in 1672.[183]

The Table reveals that the Company retained more rock salt than white salt. Only 66% of rock salt acquired by the Company was accounted for by the end of the period, whereas almost all Cheshire and Droitwich white salt (94%) was either sold, processed or warehoused. Much of the discrepancy in rock salt can be explained by the requirements of the Company's growing network of pans and works.[184] Of the 358.47 tons of rock salt traded, a fifth (73.19 tons) was either reserved for the Company at the Ham Mills factory or warehoused in Cellars B and K. Rather more was sold directly to major local users like Thomas Lockyer of Ilchester (who took

Table 5.9: Principal buyers of salt from Hoare and Company, 1696-1698.

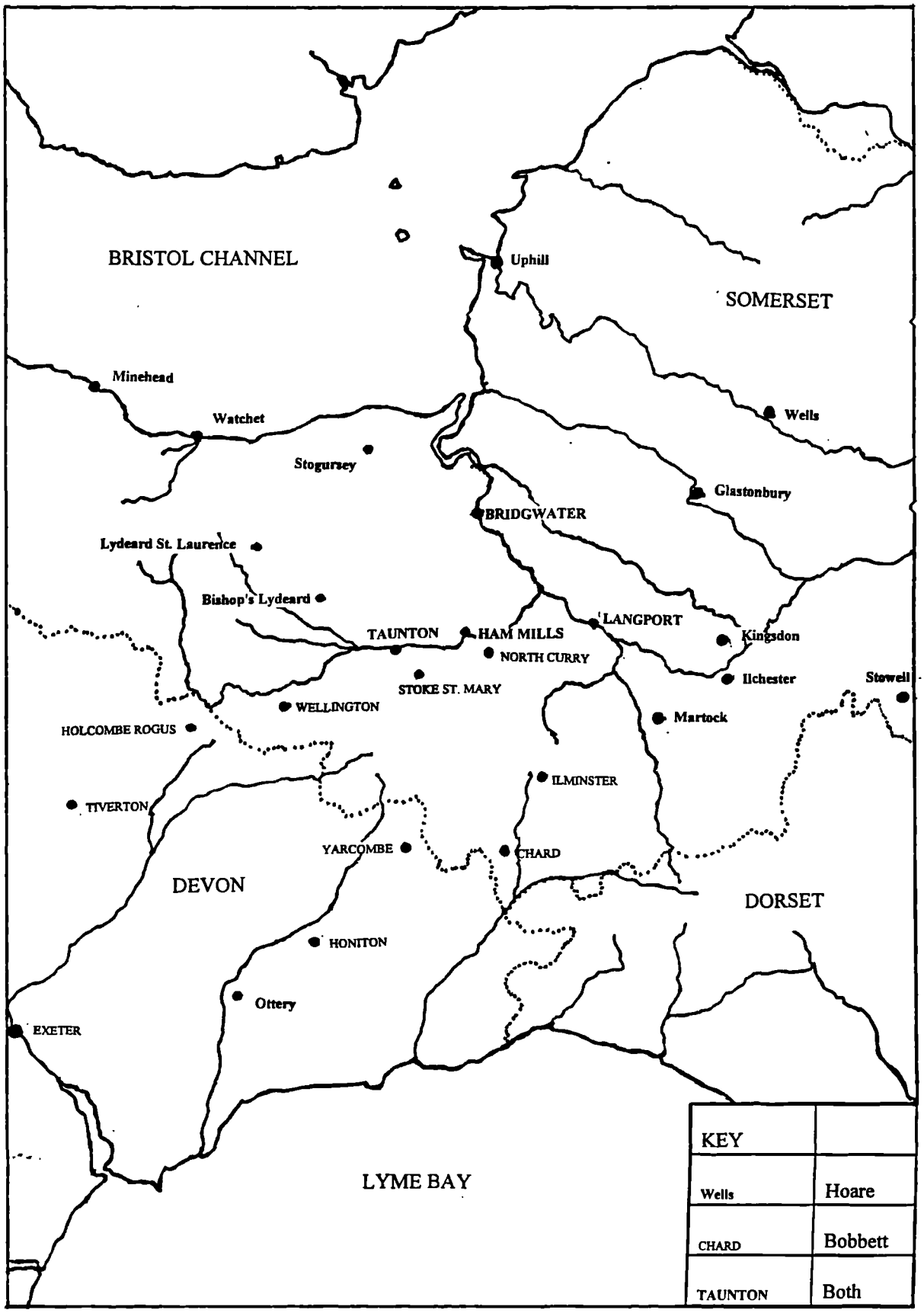
Buyer	*Status*	*Place*	*Tons White*	*Tons Rock*	*Total*
Factory of salt	Factory of salt	Ham Mills	261.15	36.00	297.15
Robert Bobbett	Merchant/Factor	Ham Mills	244.32	-	244.32
Joan Diaper	Salter	Bridgwater	135.05	4.50	139.55
Thomas Lockyer	Salter	Ilchester	23.28	93.45	116.73
Vincent Boldy	Merchant/Carrier	Langport	64.88	10.95	75.83
Hugh Woodbury	Salter	Ham Mills	40.63	30.00	70.63
Henry + William Hambridge	Merchants	Uphill	4.00	51.00	55.00
Nathaniel + Hannah Scorch	Merchant/Master	Bridgwater	48.40	2.50	50.90
Sebastian Llewellyn	Merchant/Master	Bridgwater	47.15	3.00	50.15
John Burford	Salter	Ilchester	25.31	23.00	48.31
James Bowles +CO	Merchants/Salters		36.95	-	36.95
Hannah Francis	Salter	Bridgwater	36.63	-	36.63
Ambrose Hozee	Merchant/Salter	Bridgwater	31.60	-	31.60
Jeans + Burford	Salters	Martock	3.50	28.00	31.50
Michael Currant	Merchant/Master	Bridgwater	26.95	-	26.95
Mr Wallis	Manager, factory	Taunton	24.75	-	24.75
John Venicott	Merchant/Master	Bridgwater	23.28	0.50	23.78
Edward Davies	Merchant/Master	Bridgwater	21.35	0.50	21.85
Joan Porker	Salter		16.00	-	16.00
Thomas Anstice	Merchant/Master	Bridgwater	15.25	-	15.25
George + Samuel Smith			15.15	-	15.15
John Hill			14.40	0.50	14.90
William Alloway	Merchant/Fishery	Bridgwater/Lynmouth	-	14.30	14.30
Thomas Palmer			12.80	-	12.80
John Pettitt	Merchant/Master	Bridgwater	12.42	-	12.42
Joan Drake		Taunton	10.40	1.25	11.65
Joseph Taylor		Ottery?	9.20	1.41	10.61
Jonathan Thomas			10.30	-	10.30
Thomas Kirby	Carrier	Langport	8.78	0.45	9.23
Thomas Coggan	Carrier	Langport	8.25	-	8.25
George Glass	Carrier		7.00	1.00	8.00
Isaac Heard	Merchant/Partner	Bridgwater	1.50	6.00	7.50
John Rood	Carrier	Glastonbury	6.35	0.50	6.85
Mr Roberts +CO	Salters?		6.60	-	6.60
Mr Capon	Carrier		5.30	-	5.30
John Wheddon	Merchant/Shipper	Watchet	-	5.25	5.25
William Milnor			5.00	0.25	5.25
Anthony Baker			4.85	-	4.85
Charles Lyst	Carrier	Glastonbury	4.80	-	4.80
Mary Smith			3.70	-	3.70
John Turner	Carrier	Glastonbury	3.00	0.50	3.50
Ambrose Marshall			1.00	2.00	3.00
Benjamin + Richard Sully	Carriers	Stowell?	2.25	0.25	2.50
Oliver Woodward	Pilot	Bridgwater	2.10	-	2.10
Henry Ruscombe		Wells	2.05	-	2.05
John Martin			-	2.00	2.00
Jasper Porter	Carrier		1.98	-	1.98
John Adams	Carrier	Bishops Lydiard	1.50	-	1.50
John Turner	Carrier	Langport	1.25	-	1.25
Richard Drake	Merchant/Partner	Bridgwater	1.25	-	1.25
Philip Cockrem	Merchant/Master		1.15	-	1.15
John Bastone	Merchant/Shipper	Minehead	-	1.00	1.00
Henry Sweeting		Lydiard	1.00	-	1.00
Elizabeth Hathman		Langport	-	1.00	1.00
Henry Peddle			1.00	-	1.00
Others (14)			4.68	0.21	4.89
To Swansea + William Beaver	Merchant	Swansea	30.00	-	30.00
Cellars A,B,K + Warehouse		Bridgwater	204.34	37.19	241.53
		Total	1535.74	358.47	1894.21

over a quarter of all rock salt traded), Henry and William Hambridge of Uphill, Jeans and Burford of Martock, and Hugh Woodbury of Ham Mills. These merchants may have used rock salt to supply their own salt works, especially those like Woodbury who also had access to coal shipped up the Parrett. For inland traders rock salt was more likely to have been used in its unprocessed or crushed form as cattle lick.[185]

The Company's supplies of white salt were more widely traded. By the end of detailed accounts in December 1698, the Company had traded almost 322 tons of white salt to its factory at Ham Mills or to Alexander Wallis, its principal manager. A further amount (around 13%) was cellared in Bridgwater. This was designed predominantly for the domestic and Newfoundland fishery, but a small, largely unrecorded proportion was sold for ready cash to local consumers and regional carriers. Salt from the quayside, warehouse and factory was also sold to a highly organised army of local chapmen, agents and regular carriers who served the hinterland. Men like Thomas Kirby and Thomas Coggan, both of Langport, operated small vessels in which a ton or so of salt, along with other merchandises, was frequently ventured. Kirby and Coggan exploited the many inland trading routes irradiating from Bridgwater and Ham Mills, at the head of the navigable river Parrett.[186] The extent of this system is supported by the dealings of Robert Bobbett's father, Richard, displayed in Figure 5.2. Deponents in an Exchequer case in 1672 attested that 'time out of mind' barges and trows were employed conveying goods 'out of any shipps or vessells rideing in the port of Bridgwater to Ham Mills, Langport or any other place or places lying on the ... river [Parrett]'. Such merchandises were then 'carryed on horses and other carriages into the country thereabouts for the supply of the inhabitants thereof'. Carriers claimed to serve places as distant as Exeter, Tiverton, Honiton, Holcombe Rogus, and Yarcombe as well as Taunton, Ilminster, North Curry, Chard, and Wellington.[187]

Many of the purchasers of Hoare and Company's white salt were carriers who probably operated over a similarly large area. Regular contacts were maintained with established carriers throughout Somerset - Glastonbury, Bishops Lydiard, Taunton,

Figure 5.2: Consumers of salt, Hoare and Company, 1696-8 and named places of trade, coal and general goods, Robert Bobbett, 1671.



and Kingsdon - were notable centres of this trade. Company salt also found its way to Stogursey, Chard, Wellington, Ottery St Mary, Tiverton and Exeter, through such traders, although such a procedure was usually recorded in the Company accounts in the form of money payments and not in tonnage dispatched. Indeed, throughout the period, Thomas Galpine, Alexander Wallis and Richard Drake were variously busy at all the major regional fairs and markets *'in the countrey' hunting down bad salt* debts.[188] One major carrier of the Company's salt to be identified was Vincent Boldy of Langport. Boldy accounted for over 75 tons of mostly white salt during the period, which he traded on his own account and for local agents. This was transported in a fleet of small craft which Boldy owned, and which were navigated by himself and lesser operatives like Joseph Denham. At Langport, salt appears to have been distributed to land carriers. In 1719, Boldy was still paying moorage and landage to the Bridgwater authorities for coals and 'forest goods' brought up the Parrett.[189]

The Company also enjoyed a curiously ambivalent association with Robert Bobbett, who possessed rival large scale warehouses and works at Ham Mills. On the one hand, Bobbett consistently bought large quantities of Cheshire and Droitwich salt from the Company, taking around 16% of all white salt traded inland. This he supplemented with salt purchased directly from salt proprietors and other Bridgwater merchants, notably Alloway.[190] However, Bobbett's relationship with the Company, always competitive, quickly soured. By early 1697, Wallis and Galpine, managers of the Ham Mills enterprise, reported that Bobbett was obstructing the Company's business and severely undercutting the factory by supplying local carriers at reduced rates, compounding such 'underhand dealings' by refusing to settle his accounts.[191] Even so, Bobbett continued to be supplied, principally through local Bridgwater boatmen, such as Joseph Tibbs, Edward Coombe, and Richard Sillivent. As with supplies sent to Hugh Woodbury, these men were employed in an ad hoc manner to ferry salt up the Parrett. Smaller amounts were also sold in this fashion to the Company's regular customers throughout the south-west. In particular, independent salt workers and dealers, such as Lockyer and John Burford of Ilchester, received

white salt directly and through lesser carriers.

Local dealers formed the 'bread and butter' of the Company's white salt trade. Most prominent was Joan Diaper, widow of Nicholas, who not only took almost 140 tons of salt traded inland, but also traded heavily with William Alloway.[192] In addition, the Company sold salt to a number of quasi-independent Bridgwater merchants and boat operators. In the case of Michael Currant, John Venicott, and John Pettitt some of the salt delivered was by way of entitlement either for their share in the cargo or 'portlage' payment for duties rendered. However, the far larger amounts taken by Sebastian Llewellyn, Nathaniel Scorch and Thomas Anstice, traders who regularly mastered their own coastal vessels, reveal that the Company sold to men who were both dealing on their own account and were not formally associated with the Company. A third category of purchasers comprised the partners and associates of the Company. Drake, Heard, Methwen, Balch and Wheddon all appeared as dealers in Company salt, yet the amounts they took were insignificant. In contrast, William Alloway, as co-partner in the fishery, at Lynmouth, took a substantial quantity of mainly rock salt. This appears surprising as Alloway was an importer of rock salt coastally. However, the 14.3 tons may have represented the requirements of the Company's half-share in the fishery and thus may not have been a commercial transaction.

iv. Hoare and Company and the wider coastal trades.

The Company did not actively seek out return cargoes for the fleet of salt vessels it owned and chartered. Occasionally a cargo of corn, malt or peas would be traded as letpass goods to Liverpool and more frequently, the Severn trows of Claroe and Corker would pick up a consignment of goods the Company had either imported from overseas or traded domestically. Thus, in 1698 Corker was entrusted to deliver small parcels of Newfoundland fish and train oil, Spanish iron, wine and sherry and local serge to agents and customers in Bristol, Gloucester, Kidderminster (via Bewdley) and

Nantwich (via Shrewsbury).[193] Similarly, Claroe shipped Castile soap and grocery goods for clients in Bristol in 1698.[194] In addition, the Company was involved in a host of minor one-off coastal shipments: wood was shipped from Tenby and Carmarthen in 1696; cinders came from Chepstow in 1697; and vinegar from Francis Stonard of Bristol in 1699.[195] Neither the Company nor its officials, however, appeared in the relevant Port Books for either Bridgwater or the port of clearance. This was probably due to the general nature of the cargoes in which the Company's goods were shipped.

The bulk trades in coal and grain were more consistently important. From 1696, the Company and its agents actively procured supplies of coal from proprietors in south Wales. In 1696, for example, it was dealing extensively with Sir Humphrey Mackworth of Neath. Mackworth had constructed new docks and storehouses in order to exploit nearby supplies of coal and, despite robust opposition to his activities, drove a substantial trade in 'great coal', 'small coals' (presumably culm) and 'stone coal'. The stone coal, he assured the Company, was 'famous ... for the making of malt'.[196] In addition, Company dealt with the Mansells of Britton Ferry (through Swansea) and a number of smaller pit and staithe owners in Glamorganshire and Pembrokeshire.[197] Three grades of coal were generally traded. Prime cost 'hearth coal' - a rough, bituminous, principally domestic coal - was shipped from Swansea and was initially much preferred by the Company's carriers and customers.[198] A slightly smaller and lesser graded 'Abbey coal' was traded coastwise from (Abbey) Neath increasingly from 1697, and culm - a small anthracitic coal intended mainly for industrial purposes - was shipped in from Tenby and, with less frequency, Milford and Neath. Milford culm was favoured, with Saundersfoot culm, traded through Tenby, generally regarded as the least merchantable.[199] Like much of the salt discharged at Bridgwater, coal was traded to local carriers via the factory at Ham Mills.

Owing to the unstandard nature of measures, quantifying the coal trade is problematic. The Port Books recorded coal shipments in chaldrons, usually London measure chaldrons, whereas the Company habitually used the wey, quarter and bushel.

Recent research has stressed the difficulty in accurately gauging the South Wales wey, and, by implication, the wey in use in the south west of England at this time. According to Nef, Rees and Symons, the wey not only differed from standard measurement, but also varied between areas of production and over time, weighing anything between two and five tons.[200] Hatcher's assessment, apparently based on Symons, suggesting 'good reasons for believing that the seventeenth century Glamorgan wey contained approximately 5 tons', has been adopted for the purposes of this research.[201]

The general confusion over the wey measure is compounded by two additional problems. Firstly, it is unclear whether the amounts scrappily recorded in the Company records refer to an entire cargo discharged at Bridgwater or merely to a part of it. Secondly, the Port Book chaldron, as applied to coals and culm, was also a highly variable measure. Nef and Willan were under the impression that the 'Pembrokeshire' chaldron of 2 tons, as distinct from the London measure chaldron of 1.33 tons used by the Glamorganshire ports, was in use at Milford and Tenby, largely because 'if the chaldron adopted had been that of London we should have expected the customs officers to have written "Coales London" at the beginning of each book, as they did at the ports of Glamorganshire'.[202] However, by matching Port Book evidence with the entries in Hoare's accounts, the London measure chaldron appears to have been the standard for shipments from both Glamorganshire and Pembrokeshire. The evidence of ships that carried both Pembrokeshire culm and Glamorganshire coals suggests that there was little difference in the number of chaldrons carried no matter the port of clearance or grade of mineral. Certainly, culm does not appear to have required such strict measurement by weight as required by the Act of 1694, and when coals were the sole item of trade from Milford and Tenby, the London measure was always used.[203] Although such findings suggest that Hatcher's London measure conversion of 28 cwt per chaldron should be adopted, the distinction between coal exporting ports has been maintained in all discussions of the trade.[204]

Table 5.10 compares the tonnage and shipments of coal organised by Hoare

and Company between 1696 and 1699 with the total amount imported coastally at Bridgwater. These figures are minima: the Company's recording of coal brought coastwise was erratic and, although ships owned and freighted by the Company engaged in the coal trade, there is no explicit connection mentioned in either the accounts or the Port Books. The first substantial dealings were not noted until August 1696 when Alexander Wallis delivered £186 5s 12d for 106 weys 1 quarter and 6 bushels (around 530 tons) 'bought on the bank of Ham Mills'. Clearly, the Company's interest in coal was by this stage long-standing. Later in August, Wallis agreed to continue an earlier contract 'for the run of his trow to Wales for one whole year ... if she shall reign so long', Wallis to effect all repairs and the Company to provide victuals and crew.[205] From this date scattered references to coal and culm bought by the Ham Mills factory reveal a consistently high proportion of colliers freighted by the Company. Until the end of 1696, the Company regularly chartered five vessels: Wallis' trow, the *William and Richard* of Bridgwater under Philip (or Lyshon) Richards; the *Diligence* of Bridgwater owned by Isaac Heard and mastered by Jerman Gibbs; the *Thomas* of Bridgwater navigated by Lawrence Bryant which was employed on a more casual basis; and the Company's own vessels the *Mary*, chartered from Hoare himself and under the control of John Page, and the *Speedwell*, mastered and merchanted by either John Venicott or John Syms.[206] From internal evidence it may fairly be assumed that these vessels traded for Hoare and Company throughout 1696. In the year, over 2,363 tons of coal and culm were discharged, with over a half coming from Swansea. This accounted for almost a third of all coal and culm shipped coastally to Bridgwater.

In 1697, the Company responded vigorously to the competition encountered from Bobbett and others in supplying the hinterland with coal. In particular, the managers at Ham Mills were concerned to secure supplies of culm and Abbey coals for summer ahead of Bobbett whose price manipulation was threatening to take away the factory's business.[207] Consequently, the Company employed more vessels more frequently, importing 3,439.8 tons of coal and culm divided almost equally between

Table 5.10: Coal and culm (in tons) imported coastally to Bridgwater, 1696-1699, controlled by Hoare and Company.

		Swansea	*Neath*	*Tenby*	*Milford*	*Others*	*Total*
1696	*qt*	3665.20	2107.00	1512.00	-	28.00	7312.20
	hoare	1216.60	763.00	383.60	-	-	2363.20
	% hoare	33	36	25	-	-	32
1697	*qt*	5231.80	5231.80	2658.60	8846.00	64.40	13122.20
	hoare	1113.00	1251.60	1029.00	46.20	-	3439.80
	% hoare	21	24	39	35	-	26
1698	*qt*	2536.80	4439.40	1082.20	-	69.06	8127.46
	hoare	145.60	471.80	47.60	-	-	665.00
	% hoare	6	11	5	-	-	8
1699	*qt*	970.20	5105.80	1366.40	345.80	1.00	7789.20
	hoare	39.20	702.80	432.60	39.20	-	1213.80
	% hoare	4	14	32	11	-	16

Shipments of coal and culm recorded at Bridgwater, 1696-1699, controlled by Hoare and Company.

		Swansea	*Neath*	*Tenby*	*Milford*	*Others*	*Total*
1696	*total*	87	54	32	-	1	174
	hoare	23	18	8	-	-	49
	% hoare	86	56	33	-	-	64
1697	*total*	121	139	59	3	1	323
	hoare	24	28	22	1	-	75
	% hoare	20	20	37	33	-	23
1698	*total*	76	119	29	-	3	227
	hoare	4	11	1	-	-	16
	% hoare	5	9	3	-	-	7
1699	*total*	31	148	37	10	1	227
	hoare	1	17	10	1	-	29
	% hoare	3	11	27	10	-	10

Neath, Swansea and Tenby.[208] The *William and Richard* undertook 18 voyages to south Wales, half of which brought back 504 tons of Tenby culm with a further 400.4 tons mostly of coals from Swansea and Neath. The *Diligence* carried 487.2 tons of coals and culm from Neath in 11 shipments, 112 tons of culm from Tenby in 3 shipments, and made a solitary voyage from Swansea with 44.8 tons of coals. The *Speedwell* completed eleven voyages taking 238 tons of coal from Swansea in 5 consignments, 166.6 from Neath in four shipments and 85.4 tons of culm from Tenby on two occasions. The *Mary* discharged 254.8 tons of coals from Swansea in 5 voyages, 98 of coals and culm from Neath in two shipments, and a further two cargoes of 105 tons of culm from Tenby.

Richard Drake also freighted his trow, the *Two Sisters* of Bridgwater, for the Company in 1697. This craft completed 16 voyages in the year: 7 shipments carried 312.2 tons of coals from Swansea; 5 more accounted for 228.2 tons of coals and culm from Neath; and a further four voyages accounted for 189 tons of culm from Tenby.[209] In addition, six more vessels appear shipping coal: the *Thomas* undertook at least two voyages carrying 53.2 tons from Neath and 47.6 from Swansea; the *Laurel* of and from Swansea was freighted on one journey carrying 33.6 ton of coals; the *Exchange* of Watchet under George Priest returned to Bridgwater with 25.2 tons of culm from Tenby; the *Exchange* of and from Tenby brought 7 tons of stone coal; the *Mayflower* of Watchet under Francis Washer shipped a single load of 19.6 tons of coals from Neath; and John Neale, returning from Liverpool in the *Providence*, loaded 46.2 tons of coal at Milford for Bridgwater.

The records are less explicit for 1698 and 1699. No further reference is made to the vessels freighted by Heard, Drake or Wallis, although it is possible that the Company maintained a direct stake in the coal they carried.[210] Instead only coal from the *Mary* and the *Speedwell* that was traded via the Ham Mills factory and from thence to local carriers was recorded in the Company's Waste and Cash Books.[211] Thus, in 1698, the *Mary,* variously under John Page, Richard Jones and Giles Venicott, was freighted on 9 occasions to south Wales, returning with 221.2 tons of

coals from Neath, 112 from Swansea, and 47.6 from Tenby. In contrast, the *Speedwell* was detained in Chester for much of the year and only undertook 7 voyages. A single voyage brought 33.6 tons of coal from Swansea, whilst the remaining shipments accounted for 250.6 tons of coals and culm from Neath. This pattern was repeated in 1699, although the decline in recording standards and the gradual dispersal of the Company's assets make reconstructing the trade highly conjectural and limited to known company ships. Hence, the *Mary*, navigated by Jones and Nathan Vosper, made 7 trips from Neath with 310.8 tons of coals and culm, 5 shipments from Tenby with 222.6 tons of culm, and a single voyage to Milford with 39.2 tons of culm. The *Speedwell's* voyages were similarly focused on Neath. 352.8 tons were traded from the port in 9 shipments, whereas 5 voyages took 210 tons of culm from Tenby, and a single voyage 39.2 tons of Swansea coals. Charles Hyman in *Fly* also completed one journey from Neath in July carrying 39.2 tons of coals.[212]

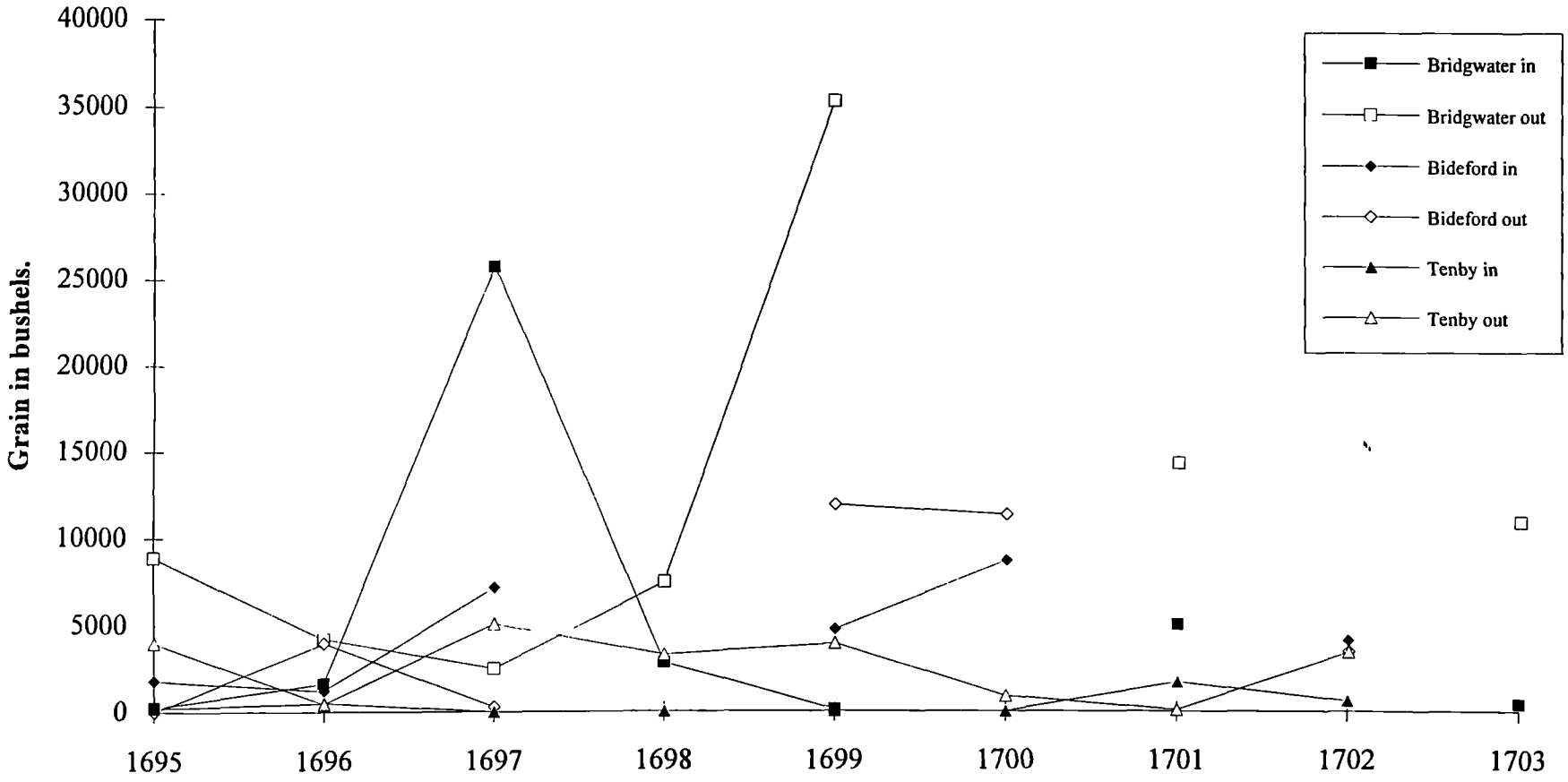
The coastal trade in grain represented an important but transient interest for the Company. In 1696, it entered into an arrangement with John Smith of Exeter to bring corn and wool from Warwickshire and Oxfordshire to Bridgwater. Supplies were collected by Smith in Stratford and transported on barges via the Avon to the Severn. The cereals were then to be transhipped at Tewkesbury, Upton or Gloucester onto one of the regular salt trows or another convenient vessel. In November Smith dispatched a consignment of 44 bags of malt on Thomas Claroe's trow, the *Thomas* of Upton, for which he was recorded as merchant in the accompanying wool coquet.[213] It is also highly likely that the three other voyages completed by Claroe and his mate, William Jefferies, in 1696 carried goods for Smith and Hoare as Smith appeared as the named indenturer on the associated wool coquets. At the close of the year, Smith was at Stratford putting together a cargo of 2,000 bushels of malt, barley and wheat and 60 bags of wool to be loaded by Claroe. The *Thomas* finally entered Bridgwater late in February having missed the January spring tide and been further hampered by frost, ice and contrary winds at Gloucester.[214]

By this time Smith had entered into a joint venture with the Company: Smith

was to oversee the buying and selling of corn and wool delivered at Stratford mostly by John Hutchings of Banbury, and the Company was to organise coastal transport and delivery from Bridgwater.[215] Claroe was chartered in May to deliver 981 bushels of wheat, malt, barley and maslin and 45 packs of wool containing 414 tods.[216] The *Thomas* completed a further three voyages in 1697 discharging 3,796 bushels of malt, wheat and mixed corn.[217] To deliver the rest of Smith's wares, much of which had been warehoused in Gloucester, the Company freighted a number of other trows. In July, Corker on the *Success* of Bewdley picked up 1,200 bushels of wheat and mixed corn and 139 tods of wool. This was dispatched overland to Exeter via the Cullompton carrier.[218] In the same month, James Harrison on the *John and Elizabeth* of Evesham delivered an equivalent of 1,216 bushels of malt, barley, peas and oats, and William Fisher, master and merchant of the *New Royal Oak* of Bridgnorth, transported 1,310 bushels of malt and wheat that was almost certainly loaded at Gloucester.[219] In August Corker transported 920 bushels of grains and beans along with his usual salt delivery, and Henry Bailey carried 1,402 bushels of malt, barley and wheat and 242 tods of wool in the *Elizabeth* of Gloucester with John Harbor as master. A small letpass cargo of wheat and a much larger wool coquet of 56 packs and one fodge, 51 packs of which were consigned to the partners, was also carried by the *Elizabeth*, Smith appearing in the Port Books as merchant.[220]

The Company supplemented formal arrangements with more opportunistic trading. For example, in March 1697 800 Winchester bushels of wheat, malt and oats were dispatched from Milford on the *Swan* under Michael Hopkins. Most of this was procured through the Company's factor, Richard Smith of Haverfordwest, who was able to exploit the lack of ready money and good bills of exchange in south Wales following the recoinage crisis to strike favourable bargains with impecunious dealers.[221] However, the grain trade was brief. By 1698, the Company's sole interest in this sector was limited to putting together infrequent cargoes of corn and root crops for Liverpool.[222]

Figure 5.2: Grain and cereal crops (in bushels) traded at Bridgwater, Bideford and Tenby, 1695-1703.



None the less, in 1697, the Company, mostly in partnership with Smith, accounted for 12,973 bushels of mixed grains and pulses. This amounted to over half the quantity of all cereals imported coastally at Bridgwater in a year in which trade rose dramatically. As Figure 5.3 reveals, these peaks were mirrored in the trade clearing from Tenby and shipped into Bideford. They were also reflected at Padstow, where the only shipments of grain to the port in the ten-year sample - 3,042 bushels - were recorded, and at Gloucester, which dispatched 112,360 bushels.[223] The reasons for this are obscure. The rise in coastal imports may have been linked to the run of bad or deficient harvests between 1695 and 1698 and the cumulative depletion of local supplies of seed corn. Climate may also have been a factor, with harvests suffering from the results of a pan-European 'intradecennial meteorological disaster'.[224] Indeed, the years of widespread dearth in 1696 and 1697 were, as Hoskins has emphasised, experienced most acutely in the south west.[225] Certainly, deficiency in Exeter and south Devon, the area to which most of Hoare and Company's grain was dispatched, may explain the high levels of trade at Bridgwater.[226] Even so, the quantity of grain and cereal crops shipped coastwise to Bridgwater in 1697 was vast, more than five times in excess of the next highest figure, that for 1701, a year of abundant to good harvests if Hoskins's indices are used. However, the impact of Company policy, given its established contacts in the Severn trades, cannot be discounted. It may well be that the Company's brief association with shipping grain, largely as a cargo filler alongside its salt shipments, was itself a primary cause of the increase in trade recorded at Bridgwater.

v. Mercantile organisation and the coastal trade of the Bristol Channel.

The previous sections have demonstrated how Hoare and Company was an important force behind the major coastal trades of Bridgwater from 1696 to 1699. However, the almost complete survival of its records can create a partial impression. Uncomfortable and often insoluble questions have to be asked about how representative the Company

was of general mercantile experience. The principal question surrounds the impressive control the Company exerted over the coastal trade in salt: can its activities in this important, but, none the less, specialist trade be seen as a paradigm for the rest of the region? Were there, for example, both formal and ad hoc associations of merchants that existed behind the first layer of traders and dealers described by the coastal Port Books? The survival of William Alloway's accounts suggests that opportunistic groupings of merchants were commonplace in the coastal trade, and only erratically recorded in the Port Books. However, very little is known of how they operated.

No comparable merchant papers relating to Bristol in this period have been found and it is to be lamented that this perspective on how the region's primate city functioned in the coastal trade cannot be comprehensively reconstructed. None the less, a number of excise prosecutions for inconsistencies occurring in the delivery and loss of salt carried to Bristol do survive and shed light upon how this branch of coasting was organised. Excise officers were required by the salt acts of 1693, 1696 and 1699 to reweigh all cargoes discharging coastally in order to ensure that embezzlement, false loading by design or negligence, or erroneous documentation did not occur. Equally, shippers and merchants were eager to confirm that accidental discrepancies and losses caused by act of God or inundation did not leave them with a hefty excise payment for goods that were unmerchantable or had simply been washed away. Consequently owners of goods questioned by the excise were often examined on oath before the Bristol magistrates to this effect.

The recognisances reveal the trade to be organised in a similar way to that at Bridgwater. In the case of rock and white salt traded from Liverpool and Frodsham, the owners of the commodity were quite distinct from the shippers and merchants appearing in the Port Books. For example, in 1699 Benjamin Stokes master of the *Amity* of Milford was charged with bringing to Bristol 7.5 bushels of rock salt over the 840 bushels registered in the salt certificate and coquet as recorded in the Liverpool Port Book. Stokes argued that the extra load was merely oversight or the difference in

recording standards or, more ingeniously, the result of moisture seeping into his cargo. None the less, Stokes attested that the salt 'did belong to Mr Peter Wadding' to be 'delivered to Mr Abraham Elton'. To complicate matters, Thomas Leine 'merchant owner' of the salt gave testimony that he had initially ordered 880 bushels from Wadding.[227] This tripartite division between owner, merchant and an independent group of factors is confirmed by the case of the *Recovery* of Liverpool. In August 1699, William Trewell, 'master and comander' of the vessel was presented alongside James Hollidge 'of the city of Bristoll, merchant' for fraudulently shipping 65 bushels of rock salt with no certificate from a total cargo of 1,008 bushels. Trewell was indicted for repeated non-appearance, but Hollidge tellingly argued that 'he was not otherwise concerned in the vessell *Recovery* or in the salt then brought upon her', but acted 'barely as a factor and a person employed to sell and dispose of such salt as should be brought upon her ... to Bristol'. The Liverpool Port Books record John Cleaveland, the salt proprietor, as merchant.[228]

Further recognisances reveal that owners of salt works in Cheshire and Liverpool featured strongly as merchants, especially after the Act of 1702 restricted the trade in rock salt. For example, a triumvirate of salt proprietors, Dr. Woodruffe, Thomas Johnson and Thomas Nixon, were responsible for an overload of rock salt on the *George and Benjamin* of Chepstow in 1705.[229] The same vessel was again indicted in 1707 with Cleaveland apparently liable for the salt.[230] A further case involving the holing of the *Swan* of Liverpool on the English ground off Steep Holm in 1706 revealed Cleaveland to be acting as merchant to salt bought of Daniel Hignett 'proprietor of rock salt near Northwich'.[231] Proprietors such as Hignett, Henry Whitehead and Matthew Page also sold to Liverpool merchants who freighted for the Bristol market. Thus, Thomas Bickclish, 'merchant of Liverpool' was held responsible for a cargo of rock salt wind-driven to Youghall in 1706, and Richard Ashton appeared as the merchant of a cargo of 3,020 bushels of rock salt, 145 of which were lost.[232] In addition, Bristol merchants who did not feature in the Port Books seem to have organised salt shipments. Apart from Elton, who was heavily involved in a

range of regional and international trades from sugar and tobacco importing to copper smelting,[233] John Scandrett 'grocer of Bristol' freighted at least four craft from Liverpool and Frodsham in 1701;[234] John Bearpacker, described as a 'salt refiner', freighted 1,181 bushels of rock salt on board the *Society* in 1701,[235] and in 1704, 1,065 bushels of rock salt purchased from Cleaveland was dispatched on the *Griffin* of Brockweir 'on the proper account and risque of Stephen Baker', merchant of Bristol.[236]

It is more difficult to understand who controlled Droitwich and Cheshire salt brought via the Severn to Bristol. Wakelin, for example, did not come to any firm conclusions linking the major shippers recorded in the Port Books with salt owners in Droitwich or users in Bristol. Even so, he did emphasise the correlation between the Cardonel list of salters in 1732 and the Port Book merchants recorded at Gloucester in 1733, suggesting that proprietors may have both merchanted vessels and chartered the more regular carriers.[237] However, the types of regular association demonstrated by Hoare and Company seem to have been replicated in the trade to Bristol with the excise presentments stressing the same intermediaries. For instance, William Perkes was indicted on three occasions between 1700 and 1702 for carrying overloads or consignments of dubious legality on the *Providence* of Worcester, and Francis Perkes was found guilty of shipping salt without proper licence on board the *Francis* of Worcester. In all cases, the Perkeses were described merely as 'master and commander' of the trows they accompanied or consigned to other trowmen like Samuel Jackson, Samuel Bowd or John Crumpe.[238] These relationships recall the Perkes-Corker association that freighted large quantities of salt from Droitwich producers to Hoare and Company. Thus, it is likely that William and Francis Perkes traded salt that they did not directly own.

The presentments can only provide impressionistic evidence: by their very nature they relate to the more atypical and illegal of the many voyages discharging at Bristol. None the less, they open up important new vistas on how the Bristol branch of the salt trade operated. As with the Liverpool trade, a separate sector of merchants

who did not appear explicitly in the Port Books appears to have had a controlling interest. This group was divided between merchant-owners closely associated with production, and general merchants and factors organising shipments from Bristol. Hence, in January 1701 Richard Lane, the salt proprietor of Droitwich, deposed that 1,567 bushels of his white salt had been lost off Minehead the previous year when the *William* of Worcester bulged.[239] Earlier, in July 1699, the *William* was involved in another presentment, wherein John Chance her 'master and owner' was charged with carrying 11.5 bushels of white salt in excess of the certificated quantity of 2,000 bushels (50 tons). The salt was delivered for Peter Evett, merchant, although Chance remained the accredited merchant in the Port Books.[240] Also in 1699, Richard Lewis, 'master of the trow called the *Hester*' was transporting rock salt from Gloucester to Bristol on the account of Samuel Packer, a cooper of Bristol. This had been dispatched from the Cheshire works 'by land carriage' to Shrewsbury and thence downriver to Gloucester before excise officials impounded 26 bushels at Bristol on the charge that it was shipped without certificate.[241] The Port Books note Lewis as the merchant of a general cargo in which this salt was included.

The piecemeal disaggregation of the dealings of both Hoare and Company and William Alloway combined with the highly fragmentary evidence relating to Bristol has uncovered much about how the regional coasting trade was organised. From this a typology of merchant-shipper can be ascertained. Firstly, it is apparent that much of the regular coasting trade was conducted by a large sector of masters: boatmen who were freighted on vessels owned or controlled by other merchants. These men were solely confined to navigating the craft, had very little or no interest in the vast bulk of the cargo they carried, and were generally paid a fixed money rate per voyage. This type of relationship can be seen in the case of John Matthews who mastered the *Satisfaction* for Alloway and Wheddon, and Thomas Fisher who skippered the *Robert and Thomas* on behalf of Thomas Anstice, himself freighted by Alloway and Musgrave. Similarly, many of Hoare and Company's ships operated in this way.

Hence, Sebastian Llewellyn mastered the *Hope* in 1697 under Michael Currant, and Thomas Claroe invariably freighted William Jefferies on his trow the *Thomas* of Upton, even though he appears to have always accompanied his vessel. This is not to say that on other occasions these masters did not assume more responsible positions: Llewellyn, for example, regularly mastered and merchanted a coal trow, the *Comfort* of Bridgwater, and was a substantial salt trader in his own right.

The functional base of the coastal trade were the master-merchants. These traders maintained a close association with one or two boats, but like simple masters of vessels they were not commercially involved with the goods carried, being freighted by other dealers and paid simple remuneration per ton transported. For example, Robert Nurton and Thomas Flemon were regularly master and merchant of the Bristol-Bridgwater packet, the *Isaac and John.* However, the boat was owned outright by Thomas Offield who only occasionally accompanied the vessel as supercargo. A slightly more advanced relationship of this type can be seen in the activities of John and Giles Venicott. Both were engaged consistently by Hoare and Company and freighted on board their ships, the *Blessing*, and the *Speedwell*, but were none the less more peripatetic, often acting on their own accounts. In the Port Books, the Venicotts usually appeared as both master and merchant, although John Venicott on occasion merely acted as master to factors like Samuel Burnall who oversaw the transaction.[242]

The complex organisation of salt carried by Charles Corker illustrates a similar relationship. Corker was freighted by independent salt producers and dealers like Padmore and Norris in conjunction with Hoare and Company. However, a second level of trowmen- middlemen, notably Perkes and Beale, were also involved, probably as they owned, or had substantial shares in the craft or other parts of the cargo. Perkes and Beale came from substantial trader dynasties and were operating and periodically crewing their own vessels from Bewdley and Worcester by the later 1670s. It is uncertain whether Corker had any direct interest in the craft he mastered or the miscellaneous goods traded alongside the salt. Certainly, the number of Bewdley

boats on which he appeared as master and merchant - the *Prosperity*, the *Success*, and the *John and Mary* - suggests the flexibility of an unfixed master. Even so, Corker was an established and trusted trader. Money consigned to Padmore and Steynor was delivered by Corker, and he also appeared to have had a hand in organising back cargo to Gloucester and Bristol. Some of this he may have carried on his own account.

A third set of traders can also be distinguished: men who acted as both merchants and masters, and yet maintained a conspicuous economic relationship with both the vessel and the goods carried. Occasionally such traders were solely merchants. However, they usually functioned as masters to independent merchants, such as Alloway and Isaac Heard, or to salt proprietors and bond payers like Thomas Johnson, John Cleaveland and Robert Hyde. For example, Hoare and Company's main shipmasters - Currant, Neale, Cockrem, Page and Higginson - all possessed substantial shares in their vessels often venturing a stake in the cargo. Although they received orders from the Company, these quasi-merchants were independent enough to organise back-cargo. Similarly, Thomas Anstice owned at least part of the barque, the *Robert and Thomas*, and Alexander Holmes a quarter share of the *Willing Mind* in partnership with William Alloway. When the *Willing Mind* was employed in the overseas trade, Holmes appeared as a conventional merchant-master on board the *Ann* of Bridgwater. In the Severn trade, trow 'owners' such as Claroe, Edward Jackson, and William Oakes fulfilled similar roles. These men had very little to do with the salt they carried for Hoare and Company being paid a standard freight. Nevertheless, they probably had a much freer hand in the lesser items they carried. Thus, the Company bought cheeses out of the *Charles* of Bridgnorth directly from 'owner' Jackson in 1697.[243]

The pinnacle of this hierarchy of traders was occupied by the merchants proper - high-level, high-status central traders, like Alloway, Heard and Drake of Bridgwater, or Sir Abraham Elton of Bristol. Such men filled the traditional picture of the 'real' merchant, as defined by Defoe: they dealt in the more remunerative overseas trades and, whilst they maintained considerable interests in local commerce and

industry, they were distinct from the 'warehouse- keepers', 'wholesalemen', jobbing tradesmen, and ship masters that were the core of the inland and coastal trades.[244] Sometimes, like Roger Hoare, MP for Bridgwater, the 'true' merchants rarely went near a vessel. However, even large scale merchant partnerships were not adverse to acting as part-factors in the sale of goods. What is more, a host of lesser, largely unnoticed agents and factors underpinned the activity of these merchants. These shadowy quasi-merchants often chartered vessels and organised cargoes, although they appear to have operated in a far more opportunistic way. The actions of the Bristol factors, Scandrett, a wholesale grocer by trade, Bearpacker, a salt refiner, and Hollidge, also a grocer, may, thus, be more characteristic of the types of merchant behind the regional coasting trade. This emphasises that a highly fluid, sophisticated system of organisation, oiled by an integrated network of merchants, factors, boatmen, factoring, and indeed credit, was in place by the late seventeenth century.

vi. Conclusion.

This section has presented a model of the commercial organisation of coasting in the Bristol Channel. However, it is not to be seen a fixed structure. Adaptability, 'elasticity' to borrow Willan's phrase, was the hallmark of coasting. Even in the case of the small boatmen, the lowest rung of this hierarchy, there was much diversity in how trade was conducted. Naturally, such boatmen entered into occasional, ad hoc relationships with larger merchants, navigating vessels in which they had little commercial interest and carrying goods in which they had only a token stake.[245] Many Port Book merchants initially served their trade in this way as masters and commanders of ships controlled by others. On the other hand, many boatmen part-owned vessels chartering them under other masters. Certainly, the more successful masters and trowmen seem generally to have graduated to a more organisational and 'mercantile' role and abandoned practical, 'on board' involvement the older, and presumably the more prosperous, they became.

The accounts of Hoare and Company and William Alloway have shed much new light upon how coasting was organised at Bridgwater, one of the largest and more active regional ports in the late seventeenth century. The chapter has focused predominantly upon the trade in three principal commodities, salt, grain and coal, and has demonstrated that these staples were organised, undertaken and disposed of by local merchants using mainly Bridgwater ships and crew. This would seem to stress Bridgwater's independence from Bristol. However, to conclude that Bridgwater operated wholly independently would be to slant the discussion towards the bulk trades and ignore the steady trade in high-value goods and comestibles from the regional capital and the cargoes shipped aboard returning Severn trows and the regular Bridgwater-Bristol packets. The accounts studied here are sadly lacking in such details, although for both sets of merchants Bristol continued to play an important role in providing the capital, financial services and international markets that underpinned regional trade.

More generally, the accounts have permitted the relationships that fashioned and completed the commercial cycle - from producer via shipper, factor, coastal merchant and, to a lesser extent, inland carrier and consumer - to be examined through a less opaque glass, to adapt Chartres' phrase.[246] This has begun to provide a new interpretation of how pre-industrial coasting was constructed. In particular, the combination of Hoare and Company's accounts with the vast catalogue of data contained in the Port Books, often dismissed as too equivocal, compromised or downright inaccessible for meaningful conclusions to be drawn, has demonstrated how the patterns underpinning the coastal trade can be more fully comprehended.

This chapter has sought to provide a more coherent picture by discussing 'some of the countless names which the Port Books record'. Although, it is optimistic to suppose that it will ever be possible to fulfil Willan's desire to recreate 'living realities in an age that was very much alive', the links between merchants and masters, often informally conducted and omitted from the Port Books, have been revealed as complex, organic relationships, far removed from the 'casual' or 'haphazard'

associations that have been seen as more generally characteristic of the coastal trade of the western ports.[247] Admittedly, this has been achieved for only two merchant groups amongst the many operating regionally, and for only one of the 13 Customs ports of the Bristol Channel. However, this approach has shown important ways in which trade can be evaluated. Computer-aided record linkage between prosopographical studies of port towns and merchant communities, and the quantitative assessment of Port Books may yet prove to open up a more complete evaluation of how regional coasting and inland distribution was organised.[248] This Chapter has gone some way to demonstrating what is possible. Nevertheless, until this is more generally practicable, one must stress that the sensitive use of coastal Port Books remains the most important way of decoding the activity of merchants in the coastal trade of pre- industrial England and Wales.

Conclusions

This thesis has sought to develop new ways of evaluating coastal and internal trade, for long the 'forgotten sector' of English economic change. It has focused upon disaggregating the coasting links of a broadly-defined Bristol Channel region, roughly comparable to the domestic hinterland of Bristol, within a manageable ten-year period between 1695 and 1704. The main aim and outcome of the study has been a thorough re-assessment of the coastal Port Books, the main source for coastal trade. The research has undertaken a sophisticated, yet flexible programme of computerisation, synthesising Port Book data with other sources, particularly the papers of regional merchants, to enable the mechanisms, patterns and organisation of trade to be studied in far more depth than has been hitherto possible. It is not argued that Port Books provide an absolute picture of trade, but that, used sensitively, they form the only consistently maintained and geographically extensive body of evidence dealing with internal trade. Given the constraints on the length of doctoral theses, the datasets and questions that have been constructed have concentrated upon the most coherent pathways through the mass of data. They do not cover all potential areas of enquiry, although the methodology employed will permit many more research enquiries to be addressed in the future. None the less, the study has emphasised three important conclusions. Firstly, it re-assesses the importance of coastal and internal trade in pre-industrial England and Wales. Secondly, it illuminates major developments in the regional and national economy and finally it suggests new perspectives on the relation between Bristol and its hinterland.

i. Towards a re-interpretation of coastal trade.

Writing in 1977, Chartres argued that 'neither the central government's system of Port Books, nor the local customs of ports ... can yield a body of information equivalent to that available for the foreign trades. But of all the internal trades, coastal shipping is

the best-documented, and the deficiencies in our knowledge of even this sector underline the problems'.[1] Such deficiencies have proceeded from two factors: an incomplete understanding of the system by which the Port Books were kept, and the pervasive, logistical problem of dealing in a quantitative but subtle way with the sheer amount of data recorded for even a medium-sized coastal port in the late seventeenth century. Between these pincers, the quality and quantity of studies have been tightly squeezed. Willan's brief outline, published over fifty years ago, remains the only extensive study of coasting. Although there have been a number of important contributions since examining the coastal trade of individual ports and commodities, Andrews' caveats regarding the problematic nature of the source have perhaps acted as a most effective disincentive to further research.[2] Undoubtedly, recent work has provided a more coherent picture of river trade, but studies concerning the physical and spatial organisation of coasting have been noticeably lacking.[3]

The research on the Bristol Channel has addressed many outstanding interpretational and logistical problems surrounding coastal Port Books. For the first time, data have been combined from a wide range of ports, enabling analysis to be extended beyond illustrative and selective examples of trades or ports. To this extent, the region serves as an important case study through which wider hypotheses regarding the role of coasting and the importance of the coastal Port Books can be made. On a simple numerical level, the thirteen head and member ports of the Bristol Channel represented around a fifth of the officially recognised Customs house establishments in c.1700.[4] The region linked together the largest provincial entrepot for foreign goods; ports with major industrial, manufacturing and urban hinterlands; ports controlling extensive inland navigations; major coal exporting ports; and fishing centres. The Bristol Channel may thus be seen to represent coasting in microcosm, and the research findings can be applied with a degree of circumspection to other regions or groups of ports. It is hoped that the methodologies discussed in this thesis will be applied to other ports at a later date.

The research has concentrated on a core period between the reforms of the

mid-1680's and the later 1720's in which the reliability and coverage of the coastal Port Books were at an optimum level.[5] Thereafter, administrative change and the vast increase in goods appears to have had detrimental effects on the levels of recording.[6] Willan's general and oft-repeated assertion that the national levels of trade declined after 1730 springs from a misunderstanding of this factor.[7] Although some low-value goods and lesser voyages were excluded, and trade at some minor ports may not have been recorded always as fastidiously as at the major centres, the Port Books within this period display high internal consistency. They are also supported by other records. For example, an almost exact match exists between the coastal Books and the surviving merchant papers of both Hoare and Company and William Alloway. Legal depositions and excise presentments confirm this picture. Such consistency between official record and 'private' account has effectively scotched the argument that the coastal Port Books, at least for this region and this period, were riddled by poor or negligent compilation or overtly corrupt practice.[8]

The extensive regional approach has only been made possible by a comprehensive programme of computerisation. This has allowed the coastal trade to be reconstructed in coherent and consistent ways. In particular, deficiencies in the record have been isolated and counterbalanced by flexible uses of Port Book data. The absence of coastal imports at Bristol from 1660, for example, has led historians into partial, highly selective and essentially non-quantitative descriptions of trade. Whilst assemblages of inwards cargoes serve as useful illustrative devices, interpretational coat-hooks to hang received ideas as to the importance of Bristol, they do not assess the relative commercial position of the port. Computerisation has enabled data from regional ports to be compiled which fills in such logistical holes. Such procedures, which could not have been contemplated using manual means alone, have important implications for the study of ports at which records are defective or non-existent.[9]

Allied to the reconstruction of lost or impaired data, the research has sought to deconstruct the text of coastal Port Books. Terms such as the home ports of vessels,

the precise nature of ports of clearance and discharge, the activity of and the complex relationship between merchants and masters, and the description, measurement and meaning of commodities have all been explained more fully. The datasets constructed for this research have also provided the strongest possible proving ground for testing the design and methodology of Port Book computerisation. The results which have emerged from this exercise have already borne fruit in both the revised Gloucester database and the continuing work to computerise selected records for the ports of the south-coast of England.[10] In many ways, therefore, the Bristol Channel can be seen as a pioneering model in studying the wider national aspects of coasting.

The sparse research on the coastal trade undertaken to date has tended to emphasise the limited range and types of goods generally carried. For example, Armstrong and Bagwell assert that 'in the eighteenth and nineteenth centuries, as in the twentieth, British coasters concentrated upon the carriage of bulk goods'.[11] This picture has been widely reflected in the literature on earlier periods.[12] Without doubt, the cost advantages conferred by water transport in comparison to packhorse and wagon were considerable and it is undeniable that coasting represented the only practical way of moving coal, ferrous and non-ferrous metals and their ores, pot clay, grain, salt, and timber over long distances. Certainly, the Bristol Channel served as the transport medium for many such staple goods: coal and culm, for example, represented the single most important commodity recorded trading from Swansea, Neath, South Burry, Llanelli, Tenby, and Milford, and featured strongly in the reciprocal import trade of the south-western ports. Grain and cereal crops were featured in all shipments clearing Cardiff; almost 80% from Bridgwater; 76% from Carmarthen; 68% from Chepstow; 62% from Gloucester; 42% from Minehead; and even 21% from Milford, a port dominated by the coal trade.

However, Chartres' statement that 'the comparative advantage of coastal shipping was expressed most clearly in the carriage of low-value/high bulk commodities, such as coal and grain, and not typically in the transport of cloths, wools and manufactures' appears conditioned by the two excellent early monographs by Gras

and Nef and does scant justice to the diversity of coasting.[13] For example, the Bristol Port Books for 1699 record well over 400 different commodities exported coastally, two-thirds of which were traded on a regular basis. A similar if more limited picture existed in the outwards trade of Gloucester, Milford, and Bridgwater.[14] The classification of goods employed in this research indicates the extent of this trade. At the major coastal centres and river ports - Bristol, Gloucester, Chepstow, Bridgwater and Minehead - the number of voyages carrying broadly defined traded commodities reveals that most sectors of production were well represented. At Bristol, of the eight categories only extractive goods (38% of voyages), wood and timberstuff (31% of voyages) and fishery goods (24% of voyages) were represented in less than half of all recorded shipments, whilst at Gloucester only metals (46%) and fishery goods (2%) did not appear frequently. Elsewhere trade was limited to more specialist often unitary forms of trade, with Bristol and to a lesser extent Gloucester supplying many crafts and manufactures and metal goods in return for largely raw materials. As has been indicated, the generally low figures for fishery goods and wood and timberstuff reflect not so much the absence of trade, but the low Customs status of the goods. Even so, the consistent record of herrings traded from the region's most important inshore fishery, Ilfracombe - 86% of all coastal clearances carried fishery goods in the sample year - has enabled this elusive trade to be reconstructed.[15]

It is clear that the Bristol Channel acted not only as the highway for standard, staple cargoes, but also provided the means by which a wide variety of goods were transported regionally. These ranged from ad hoc consignments such as Sir Edward Mansell's private household lumber and effects, to a regular, organised trade in high-value commodities. The transporting of livestock between south Wales and the south west represents a trade with high unit value and no little degree of danger: between 1695 and 1702, Tenby was shipping an average of over 2,000 swine per year, mainly to the Somerset ports. In addition, to invert Chartres' criterion, many high-value to bulk commodities were traded. For instance, soap appeared on over 35% of all

coastal voyages from Bristol in this period. Glass and glasswares featured in between 30 and 40% of all Bristol shipments, with around 15,000 glass bottles and vials recorded per year, whereas Stourbridge glass occurred in 15% of shipments passing downriver through Gloucester.[16] Between 1695 and 1701, some three-quarters of all voyages clearing Bristol carried grocery wares. In 1699, Bristol was exporting over 1,700,000 lbs of tobacco coastally, representing perhaps around two-thirds of the total amount of tobacco retained by the port.[17] However, such high value to bulk items did not only emanate from established centres of large-scale manufacture and trade. In the sample year alone, four out of every five shipments from Cardiff carried stockings, and Bideford and Barnstaple traded tobacco, wine, and over 53,000 pieces of earthenware, over a fifth the total amount traded regionally.

The heterogeneity of the trade in goods illustrates two further factors. Firstly, coasting presented a flexible response to transport requirements and geographically precise stimuli. As a corollary to this, the coastal trade of the region formed a sophisticated and regular system of exchange. The evidence suggests that in peacetime consistency was a marked feature of the coastal trade. Although some seasonal variation is observable, it was mostly confined to the more exposed ports and those, like Tenby, with limited harbour facilities. The overall picture contrasts strongly with the assertion that 'coasting was reduced to small proportions in January and February'.[18] Certainly, stoppage as a result of inclement weather was a factor in the winter months, especially in 1695.[19] However, in regional terms, it appears that the centripetal influence of Bristol's St. Paul's fair caused inwards trade to peak in January with a correspondingly large number of voyages clearing the port in February. This pattern was repeated even in years of marked climatic disruption. In contrast, war exerted a more debilitating effect on trade. Coasting was highly susceptible to privateering and many coastal shipments may have terminated in the safe waters of the Bristol Channel or have been diverted to overland routes as a result. None the less, it is still apparent that potentially hazardous voyages to and from Liverpool were relatively undisrupted.

The overall impression conveyed is one of regularity. When Hoare and Company of Bridgwater required the shipment of hemp and pitch brought overland to Bristol from London in 1697, they were assured that prompt delivery would be arranged through Edward Davis or the next departing Bridgwater trow. The company received its goods within twelve days after just missing their appointed carrier.[20] Clearly Hoare could exploit a number of vessels, the forerunners of the 'constant coasters' of the later eighteenth century, that plied a given route as regularly as the variables of weather and freightage allowed.[21] A similarly regular service also characterised trade on the Severn. In 1684, Sir Robert Southwell was advised that 'the best & cheapest way of conveieinge your lumber forwards & backwards [from Bristol to Banbury] will bee by water to Stratford uppon Avon'. To do this Southwell should 'enquire for one Richard Vicres [sic Vickers] ... a bargeman' who was to be found 'uppon the key att Bristoll every springe tide'. Vickers mastered the *Richard and Sarah* of Tewkesbury on a cyclical service.[22] Both anecdotes reveal a coherent system to be in place through which any variety of consignment could be delivered as demand required. This is borne out in the recurrence of the same masters and boats in the coastal Port Books plying almost fixed routes. Therefore, Chartres' pessimistic view of the output of coastal tonnage would seem to be invalidated by the regular practices of the core Bristol Channel trades. It is clear that many coasters could and did 'achieve ten or twelve voyages a year' and that those 'smaller ships making no more than one or two voyages' were very much the exception.[23] As it was demonstrated in Chapter 4, even such an opportunistic trader as Thomas Hooper, master of the *Samuel* of Upton, was none the less a very busy trader.[24]

ii. Coastal trade and the economy.

The research has indicated that important re-appraisals of the role of coasting need to be made. These have significant repercussions upon the wider study of internal trade and the gearing of the pre-industrial economy. The most critical factor concerns the

degree of organisation and the integration involved in serving both regional and more removed markets. It is clear from the previous discussion that the regional mechanisms of coasting were not 'casual and haphazard'. Indeed, the erratic or chaotic impression of trade given by a cursory examination of Bristol or Gloucester, for example, translated in practice into an effective, highly structured commercial system. A merchant could ship almost anything anywhere served by the coasting and river network. Hoare and Company, for instance, frequently entrusted returning Severn masters to carry not only monies for their Droitwich salt partners, and overseas goods like soap, wine, and fruit for their Bristol associates, but also more speculative cargoes of fish, oil and stuffs which were hawked up the Severn on any available trow.[25] Coasting fitted seamlessly into an integrated system of water carriage, the benefits of which were extended by overland routes radiating out from the ports. Thus, packhorses and wagons distributed coal, salt, wool, tobacco and other merchandise from Bridgwater throughout Somerset and south Devon and into Wiltshire and Dorset; the overland trade in tobacco from Bideford to Exeter and Plymouth could assume large proportions in war years; and we have already seen how Hoare and Company combined long-distance metropolitan overland carriers, short-haul regional carriers, and coasting to shift goods quickly.[26]

The coastal trade formed an integral part of a complex yet responsive transport network. The control of this network was also highly organised. Admittedly, Port Book data reveals the prevalence of merchants who either also served as masters - the ubiquitous 'merchant seaman' - or operated in an generally 'unspecialised' fashion.[27] However, the accounts of Hoare and Company and William Alloway indicate that the commercial organisation of cargo was far more developed. It is clear that behind many formulaic Port Book descriptions, sophisticated forms of organisation existed. These involved established provincial merchant houses supporting a network of factors, agents, supercargo masters, and lesser middlemen in their areas of supply and delivery. For example, in dispatching a consignment of grain and wool from Banbury to Exeter, Hoare and Company entered into partnership with supply and

wholesale merchants; Banbury corn factors; carriers and bargemen transporting the goods to Stratford and from the Warwickshire Avon to the Severn; the trowman Thomas Claroe on a fixed freight from Tewkesbury to Bridgwater; and more carriers to dispatch the goods overland to Devon. Regional and national credit networks financed the operation. In addition, the Company was also advised of grain prices in the immediate locality, in south Wales, the north-west, and in Ireland through a communications network that cut through regional particularism. The cost benefits conferred by the integration of both inter-regional and distant trade, allied to savings produced by the greater division of labour, economies of scale, and the rationalisation of distribution were important factors not only in the development of the regional economy. They were commercial realities at a time when previous research has suggested that such levels of organisation were either more characteristic of the later eighteenth century, or to be found largely in the major London-based staple trades.[28]

The study also demonstrates wider developments in the pre-industrial economy. The argument that coastal shipping extended the market for coal and was itself synchronously extended by the demands of trade appears to be in part borne out by the research.[29] In the sample year, 1,558 voyages carried over 42,000 tons from the south Wales ports alone. This seems slight in relation to Nef's figures, and the east-coast trade in general, although it may serve as a warning against the less quantitatively informed estimates employed by Nef.[30] In addition, Shropshire coal traded on the Severn - perhaps 100,000 tons per year in the later seventeenth century - was almost exclusively confined to the navigation proper.[31] Even so, south Wales coal found ready markets not only in the region but also along the south coast of Cornwall and Devon, and was vital to regional industrial development, especially salt boiling.

However, it appears that cheap, coastally-conveyed fuel did not act as a spur for a more widespread regional base to early industrialisation. Certainly, the classic model of development, wherein the number of shipments clearing the south Wales coal ports should have provided opportunities for easy and inexpensive back-cargo

and the extension of local production, was not a major factor in the coastal trade of the late seventeenth century. Most colliers returned in ballast or with items of little customable value. The cyclical trade by which Swansea Bay coal was exchanged for Cornish copper ore, which was to form such a characteristic feature of regional industrialisation in the eighteenth and nineteenth centuries, was a very nascent and undeveloped trade at this time.[32] This may indicate the lack of markets in the south Wales hinterland for regionally produced goods, or that the south-western peninsula, particularly Cornwall and Devon, were not able to construct suitably diverse cargoes. Perhaps more tellingly the principal regional centre, Bristol, from which the region was supplied with such cargoes had collieries close at hand and thus was not reliant on coastal supply.

The study has also emphasised important strategic questions in the trade in commodities. On one level, it has demonstrated that coasting was responsive and flexible enough to cope with dramatic shifts in domestic production. Although encouraged by structural change and the demands of a fishing industry hit by overseas embargo, the growth in Droitwich white salt and Cheshire rock salt in the mid-1690's was only made possible by river and coastal shipping. In 1699 the region received over 5,800 tons of salt, 70% from Liverpool. The effect of this was to open up long-distance trade conferring reciprocal benefits upon regional centres. Salt imports promoted a steady return trade in agricultural goods, small manufactures and metal ores both to the north west (where ballasting meant increased overheads beyond the short-haul coal trade) and Gloucester, thereby bypassing the intermediary role of Bristol.

In addition, the coasting trade articulated many items of 'conspicuous' or even 'mass' consumption identified in the pre-industrial economy. Modish Bath and Hotwell water was first traded from Bristol in this period, mostly on Shrewsbury boats,[33] and many of the 'new and decorative goods outlined by Weatherill - glasswares and earthenwares, especially - found their way to the households of the relatively humble through commercial networks based on the coastal trade.[34] Indeed,

if Shammas' estimates concerning the mass consumption of new groceries are used, Bristol can be seen as serving a notional 850,000 'mass consumers' with tobacco by the late seventeenth century.[35] It is clear, therefore, that the coastal trade in the region was a vital organ in the structuring of the pre-industrial economy.

iii. Bristol and the coastal trade.

An underlying theme in this thesis has been the re-appraisal of Professor Minchinton's assertion that in the coastal trade Bristol acted as the 'commercial metropolis' for an economically varied hinterland.[36] Certainly, Bristol was the focal point of an extensive coastal and riparian network. The Port Books for the region reveal that some 1,360 voyages cleared or entered for Bristol in the sample year. In addition, voyages from ports beyond the region and unrecorded non-coquet shipments indicate that Bristol handled a minimum of between 1,600 and 1,700 coastal voyages annually. This represented perhaps a third of the coastal voyages of London, which was far more dominated by single coal shipments than was Bristol.[37] None the less, a comparison between Bristol's coastal and overseas trade is instructive. Although the tonnages, capital, and value of goods involved in overseas commerce were considerably higher, somewhat more than three times as many shipments were involved in the city's coastal trade than were engaged in its higher profile and historiographically more important foreign trades.[38]

However, if Bristol was a regional metropolis it is clear that it operated on a differential basis. Undoubtedly, its fairs imposed a distinct seasonality on trade, its growing population and commercial contacts swallowed up an increasing amount of regional goods and raw materials, and in terms of manufactures, consumables and above all overseas commodities, Bristol was the focal point of trade. For example, in 1699 over 95% of the tobacco traded coastally in the region came from Bristol, with neither Liverpool nor the north Devon centres substantially affecting trade, although by the 1730s this position was beginning to be challenged.[39] Nevertheless, the pull of

the Bristol market even by the late seventeenth century was felt most strongly by the ports above the Holms. Away from this stretch of relatively enclosed water, Bristol's influence was more dilute. Thus, whilst the port took over half the amount of grain traded regionally in the sample year, 87% of its supply came from Chepstow, Gloucester and Cardiff. In contrast, Milford, Bridgwater and Carmarthen sent substantial quantities to extra-regional centres, notably to Liverpool as back-traffic for salt. In addition, both coal and, to a lesser extent, salt, were trades that were conducted independently from Bristol, Even though Bristol remained the principal regional port importing salt coastally, the dynamic effects of this high frequency, highly capitalised trade were distributed more equitably amongst the region. With coal, only a trickle of shipments, mostly from Shropshire, entered Bristol. In comparison, coal and culm remained the most definitive and important trades for the ports of region. Throughout the period, the control of this trade was almost entirely in the hands of regional merchants.

The role of Bristol in the organisation of trade was also ambivalent. From Port Book evidence, it appears that both the traditional mercantile elite and the broad base of inland traders were not as directly involved in the ownership of coasters or the merchanting of goods in the late seventeenth century as they were in earlier periods. This contrasts with Sacks' arguments concerning the widening of Bristol's commercial and social gates, and it may be that Bristol, like London, chose to leave its most basic trade to a network of dependent satellite ports and traders.[40] However, the research has suggested that Bristol merchants, as with the investment of mercantile capital in regional industries later in the period, may have underwritten much of the port's coastal trade, albeit in somewhat indirect ways. Even so, although the absence of merchant papers for Bristol as extensive as those surviving for Bridgwater in this period makes such conclusions tentative, the evidence of Hoare and Company suggests that the level of organisation at Bristol was likely to have been extensive and complex.

The mechanisms by which coasting supplied the connective tissue in the pre-industrial regional economy were sophisticated and highly developed even by the late seventeenth century. This study has highlighted some of the major features of the coastal trade in the Bristol Channel region. It was to this region and especially the Severn valley hinterland that Bristol merchants looked to offload, often indirectly, the products of overseas trade that poured through its open gateway. The benefits of overseas trade in terms of capital, investment, finance and expertise were to follow the flows of goods established here in the later eighteenth century. However, as Clark has argued, 'great port cities cannot be understood by confining our attention to overseas trade',[41] and analysis of the coastal Port Books for the Bristol Channel shows very clearly that underpinning the great narratives of Bristol's overseas commerce, the importance of internal trade must not be forgotten. This also has resonances for other regions. The emergent port of Liverpool and, more vestigially, Chester exerted similar influences upon a wide, industrialising hinterland that was to make great strides in the later eighteenth century. The interfaces between overseas goods and river and coastal communication demonstrated in the Bristol Channel also have echoes in the trade of Hull and the tributary network of the Humber. The study of such regions can only benefit from greater research into the processes of internal trade.

Greenstein has recently warned us that in an age of increasingly accessible computerised data we are in danger of 'losing sight of the aims associated with a particular enquiry' and succumbing to 'the ambling, uncritical search for any information that is sometimes associated with the nineteenth-century historian'.[42] Whilst this study has stressed the importance of computerisation and the quantified approach, it has tried to avoid bludgeoning information into either disposable 'byte-sized' gobbets or meaningless strings of data. By applying sensitive, yet rigorous methods to the coastal Port Books and also to more selective, illustrative sources, an integrated resource has been constructed; a resource which will permit rather more enquiries of a specialist nature than for reasons of time, space and also energy have been undertaken here. With the move towards greater data exchange and exportable

(and comprehensible) methods, it is to be hoped that this initial attempt to combine data from a large number of ports to shed light on the operation of internal trade will provide the stimulus for further studies.

Appendix 1.

Bristol Channel project, the Portbooks Programme.

Information and transcription rules for volunteers

Version 6: DPH: 06/05/1992

(This document represents the revised information pack distributed to all volunteers engaged in transcribing the Port Books from the ports of the Bristol Channel and beyond).

The Exchequer Port Books are a unique and invaluable source for studying the coastal trade of England and Wales from the late sixteenth to the late eighteenth centuries. They record in detail the movements of boats which passed on coastal voyages between domestic ports and havens, naming the operators and boats involved in the trade and describing the cargoes carried. Nationally, well over 3 million individual voyages were recorded containing details of different commodities, vessels and merchants for the 123 Customs ports and creeks. The Port Books therefore rank as perhaps the most informative source in existence, probably anywhere in the world, for studying internal trade in the pre-industrial period.

The potential of such records to shed light on many historical themes is vast, but the analysis of such material to provide sound and systematic historical conclusions would be prohibitively time-consuming if traditional manual methods were used. It is for this reason that the use of the coastal Port Books by historians has been limited in the past. The comprehensive and faithful computerisation of the records currently being undertaken by the Portbooks Programme will bring about a revolution in their application to historical problems.

The Portbooks Programme is based at the University of Wolverhampton and initially began with research into the Gloucester Port Books in 1982. It was recognised that the Port Books for Gloucester were of special interest in that they recorded voyages on the River Severn rather than just along the coast. Full computerisation of

the records was begun in 1985 with the aim of providing as comprehensive a transcription as possible for the whole period of their existence. To this extent, microfilm copies of all extant and reproducible coastal Books have been procured from the Public Record Office. The purpose of this approach was to ensure that the database was capable of satisfying the needs of not only the researchers at the then Polytechnic but also future scholars, the nature of whose enquiries was largely unforeseeable. Since 1988 the project has widened into a major programme funded by the *Economic Research Council* and the *Leverhulme Trust* with the aim of examining sample Port Books nationally and undertaking a variety of connected studies. New databases have been established of the Port Books for the legal ports and recognised creeks of the wider Bristol Channel, from Mounts' Bay (Penzance) in Cornwall to Milford in Pembrokeshire. In addition, sample databases have been set up for the remaining Cornish ports, Exeter, Cardigan, Aberdovey, Chester and Liverpool. These discrete databases are concentrating on the period around the end of the seventeenth century for which the records are most detailed and numerous.

With the expansion of the Portbooks databases, information will soon be made available about the coastal trade of a significant part of south-west Britain, the inter-regional exchanges of western England and Wales, and the production and consumption of commodities as diverse as agricultural produce, textile manufactures, coal, iron, and imported luxury goods.

The Programme aims to expand the techniques and methodology developed in the Gloucester Database for the setting up of a national standard for computerising Port Books. Three other main projects are underway: the preparation of a guide to the interpretation of coastal Port Books; the compilation of a *Dictionary of traded goods* which appear in the Port Books and other sources, and a substantial examination of the role of Bristol in the trade of the south west and Wales. To date, the Gloucester database is complete, containing all 170 Books in their entirety and numbering over 37,500 separate voyages. The data so stored describe perhaps 2 million discrete entities of information relating to the movement, organisation and operation of goods

traded coastally. The database is currently being downloaded onto a networked PC-run platform, and it is expected that a marketable version on CD-Rom, using widely compatible SQL software will be available by 1995.

An introduction to the documents

Port Books were instituted in 1565 to improve the collection of Customs duties and to assist in the general supervision of trade. Overseas Port Books recorded boats trading between domestic and foreign ports, giving details of their movement and cargoes for the purpose of levying duties on imports and exports and the prevention of illegal trading. In contrast, coastal books were kept to check boats passing between the ports of England and Wales, thereby ensuring goods were not carried overseas under pretence of coastwise shipment. Both classes of record are now kept by the Public Record Office, Chancery Lane, London, and number some 20,000 volumes. Of these, probably 8,000 relate to the coastal trade.

The Coastal Port Books were kept by Customs officials at each of the headports and those lesser havens with sufficient trade to warrant separate records. New Books were dispatched to the ports at regular intervals and were returned to the Exchequer to be checked against one another when completed. By this means discrepancies and fraudulent practice could be isolated by the Exchequer clerks and appropriate measures taken. In most cases the books recorded inward and outward coastal traffic at a particular port over a defined period. From 1685 books were issued for the six month period before and after Christmas each year, although this varied between ports and over time.

The method by which the Coastal Port Books were compiled was as follows. As a vessel was loaded, its cargo was listed by Customs officials and entered into the `outwards' section of the Book. In addition, the merchant or whosoever stood surety for the cargo entered into a bond or handed over other security to guarantee that the cargo would be taken to its professed destination and not exported. The master of the

vessel was then issued with a *coquet* which documented the transaction. On arrival at its destination, the vessel would submit to the inspection of Customs officials there who checked the cargo against the coquet and entered a full description in the `inwards' section of their own Coastal Port Book. The officers would then endorse the coquet or make out a *certificate* to affirm that the cargo had been duly landed. On return to the port of lading, this would be submitted as proof that the cargo had been legally transported and not carried abroad, at which the bond could be retrieved. Failure to return a certificate without good reason rendered the bond forfeit. An identical procedure operated in reverse if, as in most cases, the vessel collected a return cargo at its destination.

If the cargo was of sufficiently low value or the risk of overseas export was marginal, additional systems of customs document, other than the coquet, were used. On such occasions commodities were permitted to move under *transire*, *letpass*, *sufferance* or *warrant*. The record of such transactions was sporadic and varied considerably between ports and over time. In some Port Books notification is virtually absent, whilst other havens, particularly those lesser centres where the carriage of largely non-dutiable goods predominated, the record is generally full. In addition, it was sometimes the case that `certificates' attesting to the payment of duty were given for imported overseas items prior to being shipped coastwise.

In most Port Books inwards and outwards traffic is recorded. However, for certain ports, notably Bristol and Swansea and Neath, only outwards voyages are consistently noted, whilst in others, Exeter, for example, internal traffic remains the sole record. We are at present uncertain why this practice was adopted, but in the case of Bristol it may have been the result of the sheer size and nature of the inwards trade. The trade of such ports can thus only be reconstructed by studying the relevant books for all the principal trading partners.

The contents of the books

A typical entry in the Port Books is as follows:

Bristol	Prosperity of Bewdley Jno Beale Ind Tho: Steward Mr 20 tons Iron & Ironware 20 Tons Pott Clay 2000 Brick 20 pa & trusses
Cert	Manchr goods & thread 4 pa & trusses Kiddmr Stuff 2 pa 1 hhd wt & 10 Cwt tand leather 1 ton red lead 60 Reams paper 2 boxes Candles 6 Doz: bags 10 Cwt timber & timbr Stuff 5 Cwt Houshold goods & Wearing Apparll Coqt Dat 23d Do.

The information given falls into these broad categories:

The date. Most regularly that on which the coquet was issued. In some Port Books other dates are given, relating to the date of entry (or unloading) and the certification or return of the endorsed coquet.

The name of the boat. Variation in the title of ships was common. For example, inversion of composite names often occurred: the Aaron & John may well be the same as the John & Aaron, and the Samuel & Sarah as the Sarah.

The Port. e.g. the Crown of *Bridgwater*. This probably relates to the habitual trading place or 'home port' of the vessel mentioned. Very occasionally the port refers to the haven where the boat was last laden. However, detailed research has confirmed that the link between the port and the residence of the merchant, which has been emphasised previously, is at best tenuous and often very misleading.

The master and merchant. In many instances the master of the vessel acted as the merchant, especially in the short haul mineral trade between the South Wales coal ports and the west of England. The appearance of separate merchants may indicate the chartering of a vessel for a particular voyage, or who owned the vessel. In general it seems that the master was in charge of the ship, while the merchant was responsible for securing the bond.

Port of origin (from) and Destination (to). This is fairly self-explanatory. In a few rare occasions more than one port is mentioned for a particular voyage.

Cargo. The items of cargo are described and quantified but not valued. Additional information regarding the provenance of certain commodities may also be given. It is not clear to what extent ALL goods had to be recorded or only those subject to duty, and it seems that this varied during the period for which the books survive. There are certainly some consistent omissions, like lime, sand and manure, for example. Other goods such as stone, fish and livestock which habitually passed by transire and letpass, were only sporadically recorded. For the late seventeenth and early eighteenth centuries, however, the records seem to be very thorough. A wide variety of units of measurement are used, and several thousand different commodities are named.

Marginal notes. In order to check on the completion of the transaction, Customs officials listed in the margins of the Port Book information such as whether the coquet was endorsed, a certificate granted, received or 'returned' to the port of issue, or indeed whether the voyage was incomplete and thus 'exchequered' (sent for scrutiny to the Remembrancer clerks), or was subject to an Affidavit stating the precise nature of the shipment.

It is often difficult to trace the round journeys of one specific boat, but this is not necessarily due to inadequate recording. Boats sailing in ballast were not recorded; a given boat did not necessarily keep precisely the same name from journey to journey and it may have had different masters and merchants and be assigned to a different place.

The System of Transcription

A selection of coastal Port Books for all the ports of England and Wales for which records survive is gradually being transcribed onto the University mainframe

computer. In addition to staff and students at the University, many volunteers, some of whom have worked extensively on the Gloucester series, transcribe information from the documents to computer data forms. The job of completing the research would simply be impossible without such generous assistance.

Volunteers with a particular interest in the trade of a port or group of ports are supplied with copies of Port Books taken from microfilms held by the Programme. The information is transcribed onto forms provided, each entry in the Books having a separate form: an example is given at the back of these notes.

Rules for transcription

A few general points need to be born in mind when transcribing. Firstly, information of the same type *must always be entered in the correct place* if it is to be found again. For example, when the computer searches for information such as the voyages of a particular merchant, it does so by looking for the string of letters in his name in all the merchant surname and Christian name boxes or *fields*. If his name has accidentally been placed in the master's name fields or elsewhere it cannot be retrieved.

The consistency of **spelling** is also important. If spellings were entered into the database which were inconsistent with the lists kept of all words and names used, the information could not be found again. A search of the commodity field for 'WOOLLEN CLOTH' for instance, would not find an entry which had been written wrongly 'WOOLEN CLOTH'. To avoid this danger, we have installed a mechanism which automatically checks every word typed in against the permitted vocabulary. If a word is misspelled it is rejected and the typists return the form for checking. This is very time-consuming if a lot of misspellings have to be corrected.

It is important that **writing** should be clear (always in block capitals) and in pencil so corrections can be made. Spaces between the words should be readily apparent to the typists. 'PORTWINE', for example, would effectively be an incorrect spelling of 'PORT WINE'. You should also take care to distinguish between figures

which the typists can misread, such as the letter 'O' and the number nought (done conventionally by diagonally crossing the number), 1 and I, 2 and Z, 5 and S and 7 and Y.

If you are using **abbreviations**, as in the case of Ports, Christian names and Boats, you should be sure that they are exactly right. It is vital that an approved code should be used and that similar codes for different words should not be confused. The code lists need to be consulted regularly if mistakes are not to be made in this way: they are the easiest to make and most difficult to remedy. Some mistakes are unavoidable, and some can be corrected later, but accuracy, consistency and clarity are important virtues when working with computers.

Occasionally, the original entry is **illegible**, and the accurate information cannot be put in its field. In these cases, put three crosses 'XXX' (N.B. there **must** be three per field). This can be searched for at a later date and sometimes corrected from the originals at the Public Record Office. If no information is given at all to put in a particular field, for example if a space is left blank in the document or if a class of information such as the home port of a boat is not given, you should mark this by putting '- - -' (again, **three** dashes must be used).

If you have any serious problems, make a note on a separate list of points to be checked.

The Fields and their Contents

The following descriptions of the field contents on the transcription form should tell you everything you might need to know about how to tackle particular problems. Since these descriptions tend to be rather long-winded, a summary is given at the end, which you can detach and keep by you.

N.B. These notes are designed to account for all eventualities. In the great majority of instances, transcription will be quite straightforward once you have become accustomed to the basic principles.

PRO Ref

It is vitally important for sorting that each entry should have a unique reference number. This is based on the catalogues at the Public Record Office within class E190. The first six figures, e.g. 1256/06, identify the actual volume. The next two, after the second slash, identify the individual folio (i.e. the leaf, front and back, or two pages as we would reckon them in a modern book), and the last two figures the entry on the folio. The volume number is to be found clearly written on the front cover of the Book; the folio number has been written at the bottom of each sheet on your copy; and the entry numbers have been written in the left-hand margin. **Remember that the computer needs telling there is a nought in a box, do not just leave a blank.** For example, the reference to the sixteenth voyage on folio eight of volume 937/6 would be written 0937/06/08/16. In such cases the 0 should be crossed.

I/O or Inward/outward

This gives information about whether the voyage is coming into or going out from the port. In the original, this is not stated for each individual entry, but it is clear from the section of the book in which the entry appears. Enter I, not 1, for Inward and O for Outward. You must read the headings at the fronts of each section of the books to check which they refer to.

Coquet Date

Before 1752 dates were usually expressed in terms of years beginning on 25 March (the Julian Calendar) not 1 January as we express them now. You therefore need to be careful in reading dates. Old-style dates need to be converted to modern-style. For dates from 1 January to 25 March add one year, so 17 January 1655 becomes 17/01/1656. Note that the scribes sometimes use '8ber' (October), '9ber' (November), and '10ber' or even 'X'ber' (December). Use modern conventions - 08 means August, and 10 means October; translate 'iiity' as 30.

If a second date is given for a particular entry, make sure that the one that goes

in this box is that of the original coquet, and not a later date. The coquet date can be recognised either by the fact that it is called such in the document (e 'Coqt dated') or failing that because it is always the earliest of any dates given for an entry (with a few minor exceptions relating to parts of the cargo). In outward journeys, the coquet date is assumed to be the date when the ship left port. If a transire or letpass is used instead of a coquet, the date should be entered in the Coquet Date field in exactly the same way. If this is undated, for instance if the record says just 'per transire', put dashes in the date field: '- - / - - / - - - - '. Second or third dates relating to an entry are noted separately, as described below.

Boat

There are two ways in which boat names may be entered on the forms according to your own preference. These are by writing the name in full or by using a standard code. If you write the boat name in full, you must modernise the spelling of names in accordance with the list provided. Each character should be written in a separate box of the boat field. If the boat has two names, like 'Thomas and Benjamin' (often abbreviated to 'Thos & Benj' in the books), write them with spaces and a plus sign between them: THOMAS + BENJAMIN.

The alternative method of entering boat names is to use standard abbreviations, which will save you and the typists time if you feel you can easily remember them. You may wish to use the abbreviations for names which appear frequently and the full version for those which are less familiar. The abbreviations consist of standard three or five letter codes given in the enclosed list. The general assumption to help you remember the codes is to use the initial letter plus the next two consonants. For example, the code for the 'Peter' is PTR, and the 'Prosperity', PRS. There are however a few important variants to avoid duplication. For example, Exchange becomes EXH to prevent confusion with Excellent EXC: Delight is abbreviated as DLH to distinguish it from Diligence, DLG.

In the case of compound names, 'Thomas and James' for example, adopt the

above procedure for the first name (i.e. the three letter code in the ordinary way), then use the initial letter plus the following consonant of the given second name. Hence, Royal Oak becomes RYLOK; Samuel and Sarah, SMLSR; for triple names treat the first word normally then use the initials, e.g. New Royal Oak, NEWRO. Again some variants have to be used to avoid duplication. Thus John and Mary remains JHNMR, but John and Margaret becomes JHNMG. The coding is nearly self-consistent and easy to use with a little practice so that the code lists seem unnecessary. That is the time when a wrong coding creeps in so easily; we have in the past confused Charles (CHA) and Christopher (CHR) for instance.

If you have a new name please write it in full, with modernised spelling. For example, if you were to come across the 'Owner's Happey Dilight' you should write OWNERS HAPPY DELIGHT.

Port

Ports and towns are always written in abbreviated forms. Codes are three letters only for towns, but are allocated by the same method as boat names, above, i.e. the first letter and the next two consonants of the modern spelling, unless this causes duplication. Thus Droitwich is DRT, but Dartmouth is DRM. Ports beginning with the letter 'B', however, cause some confusion: Bridgwater is coded as BRW; Bridgnorth as BRI; Broseley as BRO; Broad Oak as BRD; Bristol as BRS and Brighton as BRG. A full list of codes is provided. If you find a new port, leave the field blank and write the full version next to the allotted space on the form. Put '---' if the port of origin is not given and 'XXX', of course, if it is illegible

Merchant's Christian Name

The merchant's name may appear as the first or second name in the Port Book but is generally recognised by the suffix 'Mer', 'Merch', 'Mercht', 'Mt' (etc) or 'Ind' (for indenturer). Christian names are always abbreviated to three letter codes on the same principle to that of Boats and Ports. Thus, George is GRG, William, WLL .and

Nicholas, NCH. Codes are provided. Only the codes may be used, but there are very few names and they should be easy to remember. If you find a new name, leave the field blank and write the name in brackets next to it.

Merchant's Surname

This should be spelled **exactly** as given in the original. Resist the temptation to standardise spelling. This can be done for sorting purposes by the computer without altering the original. If the merchant is denoted 'sen' or 'jun' leave a single square and put 'S' or 'J' respectively in the next square, e.g. 'OAKES J'. If the name is a company, for example 'Wallington and Co', write 'WALLINGTON +CO'. Similarly, if the name is 'Pennington and Son', write 'PENNINGTON +SON'. Note, there should be a space only after the name itself.

In the very rare circumstances of two merchants being mentioned, the name of the second merchant should be put in the Miscellanea field **and** the Othname fields (see below). In a few books the merchant's occupation and town of residence are stated. These are also noted in the Miscellanea field (see below).

Master's Christian Name

This should be entered in exactly the same way as the Merchant's Christian name, above. This should be checked by making sure that the full name is followed by 'Master', 'Mast', 'Ma', 'M~', 'Mter', though in some cases the abbreviations used make this difficult. Where the master and merchant are the same do not enter 'himself', 'he', 'ditto' (or 'do'), 'idem' or 'eodem' as the port books often do but enter the full name again. If you do not, a list of all the masters produced by the computer will either have a lot of blanks, as though many voyages had no merchant at all, or a very long entry under 'himself', which is not very informative! To note the fact that you have made this artificial alteration to the information, write 'HIM' in the Miscellanea field (see below). This enables separation of cases where it is possible the merchant and master were different people with the same name. This is quite possible in merchant families

who made continuous use of the same Christian name, such as the Beales of Bewdley who had a John in every generation.

Master's Surname

See Merchant's Surname and Master's Christian Name above.

From

This box should contain the name of the port of departure for a voyage. The three letter town codes should be used (see Port above), Check for consistency between the O/I and the from and to boxes, as this is a common place for errors. If you have entered 'O' correctly the journey must ALWAYS go from the port to which the Book belongs. If 'I' is entered ships must ALWAYS be going to the named port.

To

This should be coded as in 'From', above. The few entries in which more than one port is mentioned, should be written consecutively. For example, a voyage to Cardiff, Newport and Bristol should be transcribed as 'CRDNWPBRS'. Please do not put spaces or other dividing marks between the codes. Some confusion can occur when the Books record 'ditto' (or 'do') as the port of destination. This invariably refers to the last mentioned port. Thus, for example the Crown of Bridgwater from Swansea to 'do' would be travelling to Bridgwater. This is a notable feature of the south Wales coal ports, where entries are commonly in list form.

Margin

This field should contain a one-letter code to indicate the type of note which often appears in the margins next to particular entries in the port books. These seem to have served the purpose of recording that certifications had been received for outward traffic or that endorsed coquets or certificates had been dispatched for inward traffic. The most frequently occurring marginal marks and the codes for them are given

below. If one does not appear, you should note this positively by writing a dash. If two marks are given, use two squares.

Certificate, Certified, Cert, Cer	'C'
Returned, Ret, R	'R'
Granted, Gra, Gr	'G'
Nothing written	'-'
Illegible	'X'

Two other marks occur on very rare occasions and are not transcribed literally. Instead the following devices have been employed. Please do not confuse these with the more frequent marks above.

'O' written in the margin	'Q'
'X'	'Z'

Often these marks are indicated by a note in the original document, usually at the top of the margin. For instance, some Books have columns which state 'Dates of Certs Returned' or 'Dates of Certs Granted' with accompanying dates. These should be written as 'CR' and 'CG'. In addition, the margin may contain other precise information, such as 'Cert Ret from Bristoll'. In such cases the appropriate letter or letters should be noted in the Margin field, and the fuller description in the Miscellanea field (see below).

On occasions it will be indicated in the margin that a journey was made not by coquet but per transire, warrant, sufferance, let pass or very rarely affidavit: all subtly different types of custom arrangement. These too should be noted by a code in this field, as shown below. If two marginal marks appear next to a particular entry, use the second square of the field.

Let Pass	'L'
Transire	'T'
Sufferance	'S'

Warrant	'W'
Bond	'B'
Affidavit	'A'

If you come across a new marginal mark, please write this in full next to the box.

Other Date

In some Port Books dates appear in addition to the date of the coquet concerned. These should be noted in the same style as the Coquet Date above and placed in the Otherdate field. If an additional date should occur, this should be put in the Miscellanea field (see below), in the form, 'OTHDATE' and the date in modern style; for example, 'OTHDATE 07/09/1636'.

Some confusion can occur between the various dates if care is not taken. In general, a **chronological order** should be maintained with the earliest date put in the Coquet Date field and normally distinguished by the phrase 'per Coqt' (see above). The next date in sequence should go in the Otherdate field and the last, if it should occur, in the Miscellanea field.

Please note that you may on very rare occasions encounter other dates attached to individual items of cargo. These describe the payment of duties and subsidies and when the goods were first imported into the country. As these refer to previous transactions, they should be entered in the appropriate cargo field (see below) and not in the date fields.

Other Christian Name and Other Surname

In a number of books several individuals are named in addition to the merchant and master. These names should be written in the OthChris and OtherSurname fields in exactly the same way as the merchants' and masters' names above. If the names exceed in number the two extra spaces supplied on the form, write them in the space below and sketch the boxes around them to show where they belong.

Miscellanea

This field contains various pieces of irregular information which cannot be incorporated in the other fields. This information may consist of a quotation direct from the manuscript in some instances, for example, 'SUNK WITH ALL HANDS DROWNED', or with slight adaptation, for example in relating special information about the status in customs of a particular item of the cargo, 'EARTHENWARE BY LICENCE DATED 07/03/1720', where the original reference may have mentioned as part of the cargo description, 'two hogsheads earthenware by licence dated 7th March 1719'.

Several classes of more standard information may be placed in this field in addition to those above. Care should be taken always to ensure that these pieces of information are inserted when they apply to a particular voyage.

1. The most regularly occurring and most important miscellaneous notes are those relating to wool coquets. Since wool was usually given a separate coquet and entry in the Port Books from the rest of the cargo carried with it, we need to be able to associate the two references in the computer. This is very useful, for instance, in counting voyages over a particular period, when one wishes to exclude what are effectively second coquets for the same voyage. Where you find a cargo which is carrying wool, and nothing else, look to see if one of the nearby entries is for the same boat and master going on the same journey. If this is the case you should make a note to this effect in the Miscellanea field of BOTH forms. On the form relating to the wool coquet itself you should write the word 'REST' and the folio and entry number of the form on which the remainder of the cargo can be found, for example 'REST 09/12'. On the form relating to the main cargo you should write the word 'WOOL' and the folio and entry number of the form on which the associated wool cargo is written, for example 'WOOL 09/10'.

2. In a few cases, different types of cargo travelled under separate types of Customs document and were given more than one entry: a coquet and a transire for example. Like the wool coquet, this practice noted as two separate entries what in fact

amounted to one voyage. When this happens you should write on the form relating to the transire the word 'COQUET' in the Miscellanea field and the appropriate folio and entry number, for example 'COQUET 06/31'. On the form for the coquet the word 'TRANSIRE' should be entered with the folio and entry number as above: 'TRANSIRE 07/01'. A similar system operates when a letpass, warrant or sufferance cargo is carried in duplication.

3. Where the master and merchant are specifically stated as being the same person (see Master's Christian name above), enter 'HIM'.

4. In some Port Books the burthen tonnage of the vessel is given for each voyage, this should be entered as for example 'BURTHEN 30 TON'.

5. Where the merchant of the voyage has his occupation and/or place of residence stated, as in some of the early books, this should be entered 'MERCHANT = MERCER OF WORCESTER' for example, or 'MERCHANT = OF NEWPORT'. If an occupation or place is given for someone other than the merchant, this should be noted in the same fashion 'MASTER = OF GLOUCESTER' or 'OTHER = PLUMBER OF DERBY'.

Check

This field is to indicate when a record is completed without omissions due to illegibility and has been checked for accuracy by someone other than the person who transcribed it. This will eventually be filled with a 'C' to confirm it has been checked at the University, though this close checking is likely to be a slow process. In normal circumstances, this field would be filled in only at the University, but if you work in a group which has transcribers checking one another's work, you may feel confident enough to fill in the 'C' yourself on those forms which have been checked.

Cargo

The descriptions of cargoes given in the port books are exceptionally detailed and of immense historical value, but sometimes require a little juggling to be

reorganised into a format standard enough for the computer to manipulate successfully. Several examples of the type of rearrangement which is necessary are given on a sample form at the back of the notes. The format consists of having one line on the form for each separable item of cargo, and four fields in each line containing, respectively, the quantity of the goods concerned, the measure or unit used to describe them, a description of the type of goods or commodity itself, and finally occasional subsidiary information, for example about the way the goods are packed, their origin, the fact that they are being returned unused, or details of the merchants involved in their initial importation. This fourth field does not in fact appear as a column on the form, since it is needed only infrequently; it is instead notified by writing a semi-colon at the end of the third field to indicate to the typists that further information belongs in the next field. No coding is used for the cargoes, but a few abbreviations are employed for ease of transcription. Standard forms of units of measurement and commodities are provided. Generally, there is very little alteration of the original record except in modernising spelling. The contents of the cargo fields are as follows.

Quantity

This field contains the numerals used to describe the commodity. These should all be in the form of arabic numerals, so modernise Roman numerals, and convert from word numbers. Please do **not** use commas to separate thousands as the computer will not accept these. For example, write 10000 **not** 10,000. Fractions should be expressed as decimals, by far the most usual of which is 1/2, which should be written as '0.5'. Take care when decimalizing that you are converting a number and not a word for a container such as a half hogshead or a half case: '6 half hogsheads' should be written as '6 | HALFHHD', while '6 and a half hogsheads' or '6 1/2 hogsheads' should be written as '6.5 | HHD'. In most instances it is incorrect to translate words such as dozen and gross into numbers, since these, like the Baker's dozen, were not always equal to 12 or 144. Instead, '1 dozen chairs' should be written in the three cargo fields

as '1 | DOZ | CHAIRS'. Only convert such words to numbers if there is a second number or unit of measurement which makes the intended number more likely to have been standard. For example, it is correct to convert 'three dozen gross of pipes' to '36 | GROSS | PIPES'. More judgement needs to be used in interpreting the words 'hund' or 'C', which may refer to 100 or to 1 CWT, or to some other measure. In these instances our rule is to follow the original and put 'HUND' *or* 'C' *in the measure field. For* instance 1 Quarter Hund Deals would be transcribed as 0.25 | HUND | DEALS. This is used throughout **unless** there is no doubt that a number was intended, as in the example '2C bundles iron bars', which is likely to mean '200 | BUNDLE | IRON BARS'.

Measure

This field contains the name of the unit used to describe the cargo, such as ton, hogshead, barrel, tierce, runlet, wey, etc, and sometimes a word such as dozen or gross (see Quantity above). The forms of such measures or units is standardised to the **singular form** and most modern spelling, with a few abbreviations used for the most commonly occurring and longer words such as kilderkin 'KK', rundlet 'RT' and hogshead 'HHD'. These are always compounded into one word if an adjective is present along with the noun, so that half hogshead, for example, becomes 'HALFHHD', and small cask becomes 'SMALLCASK'. A list of all the standard forms is provided. In a few instances the unit of measurement is more precisely described **after** the commodity, for example '3 chalders coals London measure' and '8 Packs qt. 23 tods of wool at 28lb per tod'. These should be written as:-

'3 | CHLM | COALS'

and

'23 | TOD28 | WOOL; 8 PACK'

Care should be taken in interpreting words such as dozen and gross and also 'C' and 'hund' (see Measure above). Take care as well over the transcription of 'pounds' where it relates to money. In other cases the word is transcribed as 'LB', but it is not

clear in this instance whether weight or value is meant, and the word 'POUND' should be used at all times. If there is no applicable unit of measure because the item of cargo is an object or many objects, use the word 'OF', e.g. '1 | OF | COPPER STILLS' or '2000 | OF | BRICKS'.

Where several units and quantities are given for the same item, these should be separated out into more than one line of cargo. '2 hogsheads 3 barrels spanish wine' should thus be written as '2 | HHD | SPANISH WINE', followed on the next line by '3 | BRL | SPANISH WINE'. Occasionally it is necessary to put two units of measurement in the same line of cargo description, because we are not certain of the precise measurement of each. In this case a '+' should be placed between them, so that 'ten packs and trusses of linen' reads '10 | PACK + TRUSS | LINEN'.

If several measures are given of which a more standard equivalent is apparent, you should put this in the Quantity field and note the detail about other containers after the Commodity field, separated by a semi-colon (see below). This is invariably the case with tobacco; for example, 'eight hogsheads one cask tobacco quantity four thousand three hundred thirty eight pounds' should be transcribed '4338 | LB | TOBACCO; 8 HHD 1 CASK'. Another common example of the need for this sort of reversal of the textual order is wool, which is described in its packages of various sorts, but also given an equivalent in tods of 28lb ('TOD28') and the three measures, hundredweight, quarters and pounds. In this instance, a cargo of '11 Packs 12 Bags English Wooll qt. 23 C 1 QR 7 LB' should be transcribed as:-

23 | CWT | E WOOL; 11 PACK 12 BAG
1 | QR | E WOOL; PART OF ABOVE
7 | LB | E WOOL; PART OF ABOVE

The additional measure is always put after the Commodity and separated by a semi-colon. Be especially careful with entries like this to make sure each unit of measurement is put on a different line and that there are spaces between the number and word of the additional measures. Please ensure that the phrase 'PART OF ABOVE' is used to denote the same items of cargo.

Commodity

The last field contains the name of the commodity being carried, along with subsidiary information about packing, and some more miscellaneous information. Standard forms are used for the commodities which consist of modernised spelling but no other alteration, i.e. write 'led oare' or 'Lede or' as 'LEAD ORE'. Never leave out words even if you think they are unnecessary, i.e. write STONE COAL and SEA COAL, distinguish COAL from COALS and be very careful to differentiate between CHARCOAL and other similar entries like CHARD COAL which may mean coke. (In fact coal is something of a minefield!) **Never** normalise WOOLLEN to WOOL. Abbreviations are used only for the more common and longer terms. Anything described as English, for instance, is preceded by the letter 'E' and a space, and British by 'B' and a space; Kidderminster Stuff is abbreviated to 'KID STUFF' and Manchester Ware to 'MAN WARE'. The standard forms are listed the enclosed list.

If more than one commodity is described in terms of a single measure, or measures, that cannot be definitely assigned to one commodity or another, both are written in the Commodity field separated by a '+'. Thus 'six barrels of cider and perry' will become '6 | BRL | CIDER + PERRY' and 'three barrels two casks cider and perry' will become '3 | BRL | CIDER + PERRY' followed by '2 | CASK | CIDER + PERRY' on the next line. If equivalents are given which are more standard than the first stated quantities (as in the examples of tobacco and wool given under Measure above), use those instead. Put the first stated quantities, which give useful information about packing, after the commodity itself and a semi-colon to indicate that it really belongs in the fourth cargo field. Separate the different numbers and words only with spaces; for example '7 packs one truss English Wool qt 64 todd at Twenty-eight pounds p tod' should be written '64 | TOD28 | E WOOL; 7 PACK 1 TRUSS'.

Occasionally, it is said that a particular car$_g$o was being **returned** (because it was faulty), and this should be noted by putting the letter 'R' after the semi-colon in the same way, indicating that it belongs in the fourth cargo field.

When additional information is given about the dutiable status of a

commodity, or where it is going or coming from, two practices apply. If this is a **single** occurrence applying to **one** item of cargo, it should be put in the Miscellanea field (see above) because it is of more general interest than its relation to the item of cargo itself, but notify that there is some further information of this sort by putting after the commodity a semi-colon and space and then the word 'MISC'.

On very infrequent occasions, some Books specify at great length the nature, status and provenance of the item of cargo, giving precise details of its importation, overseas merchants and delivery. In such cases, where there is clearly no room for such voluminous descriptions in the Miscellanea field these must be put **after** the commodity as above. Thus for a voyage completed in 1699, an entry of '12 barrels Span and Port Wine qt 80 Gals duty paid and subsidy secured per Wm Swimmer and Nicho. Scandrett 5th April Instant out of the Olive Branch' would be transcribed as:-

80 | GAL | SPANISH + PORT WINE; 12 BRL DUTY PAID + SUBSIDY SECURED PER WLL SWIMMER + NCH SCANDRETT 05/04/1699 OUT OF THE OLIVE BRANCH

On these mercifully rare occasions, both names should also go in the Othername field as above.

A SUMMARY OF THE FIELDS AND THEIR CONTENTS

PRO Ref
Unique reference number for the entry in the Port Book consisting of the book number (e 1256/07) followed by a slash, the folio number, followed by another slash, and the entry number. e.g. 1256/07/10/04

I/O
I or O to show whether the voyage was In or Out of the named port.

Coquet Date
The date, following modern calendar, with slashes between day, month and year. The date should be the date of the coquet rather than any supplementary date that may appear. e.g. 17/03/1699

Boat
The boat name, either in full or in the three or five letter code. e.g. MRG or MARGARET, JHNMR or JOHN + MARY

Port
The place of which the boat is said to be, expressed according to a standard three letter code. e.g. BWD

Merchant's Christian Name
The merchant's Christian name expressed in a standard three letter code or in full. e.g. JHN or JOHN

Merchant's Surname
The merchant's surname expressed as written in the original. Jun or Sen written with the letters J or S after the name itself, with a space between. e.g. BEALE J

Master's Christian Name
As for merchant above

Master's Surname
As for merchant above

From
The coastal port from which the boat departed, expressed using the three letter code as above. More than one departure point can be put down, with no spaces between. e.g. BRSCHP

To
The coastal port of the boat's destination, expressed as 'From' above.

Margin
Marginal marks in the text, expressed in single letter codes (see text) e.g. C

Other Date
Any second date, i.e. other than that of the coquet, which may appear in the entry, expressed as date above.

Other Christian names and surnames
Names of people other than master and merchant, written as for merchant above.

Miscellanea
Various items that cannot be included in other fields (see text).

Cargo quantity
The numbers by which a cargo item is quantified. Do not use commas when transcribing units in thousands.

Measure and Commodity
The closer description of the cargo. These two sets of fields demand substantial reorganisation of the data. Read the explanations in the main text above.

Appendix 2: Commodity strings recorded at Bristol, coastal exports, 1699.

Commodity string	Count
---	3
ALABASTER	1
ALABASTER STONE	1
ALABASTER STONES	1
ALE	2
ALOES	2
ALUM	4
ANCHORS	1
ANCHOVIES	3
ANVILS	4
APOTHECARY	21
APOTHECARY WARE	11
APPAREL	30
APPLES	10
AQUAVITA	2
ARSENIC	1
BACK STONES	1
BACON	11
BAGGING	2
BAGS	1
BAR IRON	5
BAR IRON + IRONMONGERS WARE	1
BAR LEAD	1
BARILLA	3
BARK	6
BARLEY	6
BARREL STAVES	4
BARRELS	1
BASKETS	1
BATH WATER	1
BAY YARN	1
BEANS	14
BEDDING	4
BEDDING + APPAREL + LINEN + SHOES + HOSE	1
BEDS	2
BEER	3
BEESWAX	1
BELLOWS	1
BELLOWS BOARDS	1
BELLS	1
BLOCK TIN	5
BLOCKS + DEAD EYES	1
BONE	2
BOTTLED BEER	5
BOTTLED CIDER	24
BOTTLES	18
BOTTLES BEER + CIDER	1
BOTTLES CIDER	10
BOTTLES MILK WATER	1

BOTTLES SPANISH WINE	6
BOX WOOD	1
BRAN	6
BRANDY	19
BRANDY + OIL	1
BRANDY + SPIRITS	1
BRANDY + STRONG WATERS	5
BRANDY + STRONG WATERS + VINEGAR	3
BRANDY + VINEGAR	4
BRANDY + VINEGAR + STRONG WATERS + MEAD	2
BRASS	14
BRASS + PEWTER	10
BRASS + PEWTER + BAR IRON + ROD IRON	1
BRASS + PEWTER + COPPER	1
BRASS + PEWTER + COPPER + IRONWARE	1
BRASS + PEWTER + IRONWARE	6
BRASS + PEWTER + LEAD	2
BRASS + PEWTER + SADLERS + IRONWARE	1
BRASS PANS	2
BRASS WEIGHTS	1
BRASSWARE	1
BRAZELLETTO WOOD	7
BRIMSTONE	1
BROAD CLOTH	2
BROAD GERMAN LINEN	2
BROWN OCHRE	2
BROWN PAPER	1
BRUSHES	3
BUSHEL IRON	1
BUTTER	11
CALFSKINS	5
CALFSKINS IN THE HAIR	1
CALLAMY	13
CALLICO	1
CANDLES	14
CANE CHAIRS	1
CANES	4
CANES OR REEDS	1
CANES OR RODS	1
CANVAS	1
CARD BOARDS	7
CARDS	1
CART HOOKS	1
CASED SPANISH WINE	1
CAST IRON	1
CAST IRON + WROUGHT IRON	1
CEDAR BOARDS	1
CEDAR PLANKS	1
CHAIR FRAMES	2
CHAIRS	58
CHALK	11
CHANDLERY	1
CHEESE	65
CHEST DRAWERS	7

CHEST OF DRAWERS WITH HABERDASHERY	1
CIDER	42
CIDER BOTTLES	2
CIDER IN BOTTLES	2
CINQFOY SEEDS	1
CLOTH	2
CLOTH + SERGE	2
CLOVER SEEDS	1
COAL	2
COALS	64
COD FISH	3
COLOURING	5
COLOURS	1
COPPER	27
COPPER + BRASS + PEWTER	1
COPPER BOTTOMS	1
COPPER FURNACES	3
COPPER KETTLES	1
COPPER MANUFACTURE	1
COPPER ORE	2
COPPER PLATES	1
COPPERAS	5
CORDAGE	14
CORDS	1
CORK	11
CORKS	40
CORN	1
CORNISH TILE	1
COTTON	2
COTTON WOOL	38
CROCUS	3
CROMS	1
CUT TOBACCO STEMS	1
CUTLERS WARE	1
CUTLERY + HABERDASHERY	1
CUTLERY WARE	2
CUTLERY WARES	1
DAMNIFIED MALT	2
DEAL BOARDS	35
DEALS	29
DEER SKINS	6
DERNAL RAISINS	1
DESKS	1
DIAPER	1
DONS	1
DOWLAS	2
DRAPERY + MERCERY	1
DRAPERY + MERCERY WARES	1
DRESSED PELTS	1
DRESSED SHEEPS LEATHER	1
DRESSED SKINS	1
DRINKING GLASSES	9
DRUGS	2
DRUGSTERY	6

DUTCH MUGS	1
DYEING STUFF	14
DYESTUFF	6
DYING WOOD	1
E BEESWAX	1
E BRANDY	36
E BRANDY + OIL	1
E BRANDY + SPIRITS	3
E BRANDY + STRONG WATERS	18
E BRANDY + STRONG WATERS + VINEGAR	10
E BRANDY + VINEGAR	12
E BRANDY + VINEGAR + STRONG WATER	2
E BRANDY + VINEGAR + STRONG WATERS	4
E BUTTER	1
E GLASS BOTTLES	1
E HONEY	2
E IRON POTS	1
E LARD	1
E MADE PITCH	2
E MADE SALT	17
E MADE SALT PITCH	1
E MADE SOAP	2
E MOLLASSES	11
E PITCH	2
E POTASHES	1
E REFINED SUGAR	5
E REFINED SUGAR + CANDY	1
E SALT	1
E SOAP	33
E SPIRITS	31
E SPIRITS + OIL + VINEGAR	2
E SPIRITS + VINEGAR	1
E TALLOW	4
E TRAIN OIL	1
E WIRE	3
E WOOL	2
EARTHEN OVENS	1
EARTHENWARE	112
EARTHENWARE + PIPES + GLASS BOTTLES	2
EARTHENWARE + TIN + BOTTLES + APOTHECARY WARE	*4*
EMPTY BAGS	1
EMPTY BARRELS	1
EMPTY BASKETS	2
EMPTY BOTTLES	6
EMPTY CASES	1
EMPTY CASKS	2
EMPTY GLASS BOTTLES	1
EMPTY HERRING BARRELS	1
EMPTY MAUNDS	1
EMPTY QUART BOTTLES	1
EMPTY TRUNKS	2
FAIR GOODS	3
FEATHERS	1
FIGS	1

FIRKIN HOOPS	1
FISH	32
FISHING NETS	1
FLAX	1
FLAX + TOW	1
FLOCKS	4
FLOUR	1
FLURRY	1
FREESTONE	1
FRENCH + SPANISH WINE	3
FRENCH WINE	2
FRIEZE	1
FULLERS EARTH	3
FURNACES	2
FUSTIC	16
GALLIPOLE OIL	1
GARDEN SEEDS	5
GERMAN LINEN	1
GIRTHWEB + TWINE	1
GIRTHWEBB	10
GLASS	58
GLASS BOTTLES	126
GLASS BOTTLES + EARTHENWARE	2
GLASS BOTTLES + EARTHENWARE + APOTHECARY WARE	1
GLASS VIALS	3
GLASSES	29
GLOVERS SHREDS	1
GLUE	23
GOAT SKINS IN THE HAIR	2
GOATSKINS	4
GOATSKINS + SHEEPSKINS	1
GRINDLESTONES	3
GRINDSTONES	10
GROCERY	275
GROCERY + DYEING STUFF	1
GROCERY + SALTERY	84
GROCERY + SALTERY + DYEING STUFF	1
GROCERY WARE	1
GROUND LOGWOOD + FUSTIC	1
GUNPOWDER	11
HABERDASHERS WARE	1
HABERDASHERY	15
HABERDASHERY + CUTLERY + MAN WARE	4
HABERDASHERY WARE	5
HAIR	1
HAIR CLOTH	2
HAIR CURES	1
HAT CASES	1
HATS	24
HEMP	22
HEMP + TOW	1
HEMP FOR BEDS	1
HEMP SEED	15
HERRING	1

HERRINGS	22
HIDES	3
HOGSHEADS	1
HOGSLARD	7
HOOPS	19
HOPS	60
HORN	4
HORNERS WARE	4
HORNS	1
HORNWARE	3
HORSE HARNESS	1
HORSE HIDES	1
HOUSEHOLD GOODS	18
HOUSEHOLD GOODS + APPAREL	2
HOUSEHOLD GOODS + WEARING APPAREL	3
HOUSEHOLD GOODS + WOODEN WARE	1
HOUSEHOLD STUFF + WEARING APPAREL	1
HURDS	1
INDIAN DRESSED BUCKSKINS + DOESKINS	1
INDIGO	5
IRISH BACON	1
IRISH FRIEZE	1
IRISH TALLOW	37
IRISH WOOL	4
IRISH WOOLLEN YARN	1
IRON	39
IRON + BRASS + PEWTER + IRON WIRE	1
IRON + BRASS + PEWTER + IRONWARE	1
IRON + CINDERS	1
IRON + HABERDASHERS WARE	2
IRON + IRONMONGERS WARE	25
IRON + IRONMONGERS WARES	2
IRON + IRONWARE	12
IRON + IRONWARE + STEEL	1
IRON + IRONWARES	1
IRON + NAILS + BRASS + IRONMONGERS WARE	1
IRON + NAILS + IRONMONGERS WARE	6
IRON + NAILS + STEEL	3
IRON + NAILS + STEEL + IRONMONGERS WARE	2
IRON + NAILS + STEEL + IRONWARE	1
IRON + SADLERS WARE	1
IRON + STEEL	15
IRON + STEEL + BRASS + PEWTER + IRONWARE	1
IRON + STEEL + IRONMONGERS WARE	14
IRON + STEEL + IRONMONGERY WARE	1
IRON + STEEL + IRONWARE	2
IRON + STEEL + NAILS + IRONMONGERS WARE	2
IRON + WIRE	1
IRON BACKS	1
IRON BEAMS	1
IRON CINDERS	1
IRON FURNACES	1
IRON NAILS + IRON PLATES + IRONWARE	1
IRON ORDNANCE	1

IRON PLATE	1
IRON PLATES	2
IRON POTS	4
IRON WIRE	1
IRONMONGERS WARE	5
IRONMONGERS WARE + COPPER	1
IRONMONGERS WARE + NAILS	1
IRONWARE	31
IRONWARE + NAILS + IRONMONGERS WARE	1
IRONWARES	1
JOINERS WARE	1
JUGS	1
JUMPS	9
KELP	4
LAMBSKINS	1
LAMPBLACK	24
LANTHORNS	4
LARD	5
LARGE LOOKING GLASSES	1
LARRY WARE	1
LAST BLOCKS	1
LATH	3
LATHS	7
LATTEN WARE	14
LEAD	60
LEAD + SHOT	39
LEAD ORE	1
LEAD SHOT + WEIGHTS	1
LEATHER	52
LEATHER SHREDS	4
LIGNUM VITA	1
LIME	3
LIME JUICE	1
LINEN	33
LINEN + DRAPERY + HABERDASHERY	1
LINEN + HABERDASHERY	4
LINEN + MAN WARE	1
LINEN + MERCERY	17
LINEN + MERCERY + HABERDASHERY	9
LINEN + MERCERY + UPHOLSTERY + HABERDASHERY	1
LINEN + SERGE	2
LINEN + UPHOLSTERY	1
LINEN + WOOLLEN	7
LINEN + WOOLLEN + HABERDASHERY	5
LINEN + WOOLLEN + HABERDASHERY + MAN WARE	1
LINEN + WOOLLEN + HABERDASHERY + UPHOLSTERY WARE	3
LINEN + WOOLLEN + MAN WARE	5
LINEN + WOOLLEN + MERCERY	38
LINEN + WOOLLEN + MERCERY + HABERDASHERY	61
LINEN + WOOLLEN + MERCERY + HABERDASHERY + MAN WARE	5
LINEN + WOOLLEN + MERCERY + HABERDASHERY + WEARING APPAREL	4
LINEN + WOOLLEN + MERCERY + HABERDASHERY + WICKYARN	8
LINEN + WOOLLEN + MERCERY + HABERDASHERY WARE	20
LINEN + WOOLLEN + MERCERY + HABERDASHERY WARES	2

LINEN + WOOLLEN + MERCERY + MAN WARE	2
LINEN + WOOLLEN + MERCERY + SADDLERY + HABERDASHERY	1
LINEN + WOOLLEN + MERCERY + SADDLERY + HABERDASHERY + HATS	3
LINEN + WOOLLEN + MERCERY + SADLERY + CUTLERY WARE	5
LINEN + WOOLLEN + MERCERY + SADLERY + HABERDASHERY	4
LINEN + WOOLLEN + MERCERY + UPHOLSTERY	6
LINEN + WOOLLEN + MERCERY + UPHOLSTERY + CUTLERY + HABERDASHERY	2
LINEN + WOOLLEN + MERCERY WARES	2
LINEN + WOOLLEN + SERGE	5
LINEN + WOOLLEN + SERGE + MERCERY	3
LINEN + WOOLLEN + UPHOLSTERY	4
LINEN + WOOLLEN DRAPERY	3
LINEN CLOTH	3
LINEN DRAPERY	1
LINEN YARN	5
LINSEED OIL	8
LOAF SUGAR + CANDY	1
LOGWOOD	21
LOGWOOD + FUSTIC	3
LOOKING GLASSES	2
MAGNIS	19
MALT	6
MALT + WHEAT	1
MALT MILLS	1
MAN WARE	24
MASTS	3
MAT GLASSES	3
MATCH	1
MEAD	1
MERCERY	17
MERCERY + DRAPERY WARE	2
MERCERY + HABERDASHERY	5
MERCERY + HABERDASHERY WARES	1
MERCERY + LINEN	4
MERCERY + LINEN + HABERDASHERY	2
MERCERY + WEARING APPAREL	5
METHEGLIN	1
MILLINERY GOODS	1
MILLSTONES	3
MOLLASSES	7
MONEY	1
MUGS	1
MUSCO SUGAR	13
MUSCOVADO SUGAR	6
NAIL + IRONMONGERS WARE	1
NAILS	19
NAILS + CAST + WROUGHT IRON	1
NAILS + IRONMONGERS WARE	4
NAILS + IRONWARE	10
NAILS + IRONWARES + STEEL	1
NAILS + SALTERY + IRONMONGERS WARE	1
NAILS + STEEL + IRONWARE	1
NAILS + WIRE + BRASS + PEWTER + IRONWARE	1

NARROW GERMAN LINEN	8
NETTING	1
NEWFOUNDLAND DRY FISH	1
OAK PLANKS	1
OAK SWIKS	1
OATS	9
OIL	83
OIL + BRANDY	1
OIL + BRANDY + STRONG WATERS	1
OIL + BRANDY + STRONG WATERS + VINEGAR	1
OIL + BRANDY + VINEGAR	3
OIL + STRONG WATERS	1
OIL + VINEGAR	4
OIL + VINEGAR + STRONG WATER	1
OIL + VINEGAR + STRONG WATERS	26
OLD BRASS	2
OLD CARDS	3
OLD EMPTY HOGSHEADS	1
OLD IRON	5
OLD WOOL CARDS	9
OLIVE OIL	31
ORANGES + LEMONS	6
OZNABRIGGS	4
PACK CLOTH	1
PACK CLOTHS	1
PACK DUCK	3
PAILS	1
PAN TILES	1
PAPER	16
PAVING STONES	10
PEAS	2
PEWTER	10
PEWTER + BRASS	6
PEWTER + COPPER	1
PEWTER WARE	1
PICTURES	2
PIG IRON	5
PIMENTO	4
PINS	5
PIPE HOOPS	1
PIPES	1
PITCH	66
PITCH + ROSIN	19
PITCH + TALLOW	1
PITCH + TAR	60
PLANK	1
PLATE	2
PORT WINE	2
POT CLAY	16
POTTERS ORE	1
PUMPS	1
QUART BOTTLES	1
QUART GLASS BOTTLES	1
QUILT	1

RADDLE	6
RAGS FOR THE PAPER MILL	1
RAISINS	3
RAPE OIL	3
RAPE SEED	1
RAW HIDES	2
RED + WHITE HERRINGS E TAKING AND MAKING	1
RED + YELLOW EARTH	1
RED EARTH	1
RED HERRINGS	5
RED OCHRE	1
RED WINE	1
REDDING	11
REDWOOD	1
REFINED SUGAR	5
RHENISH WINE	1
ROCK FISH	1
ROCK SALT	16
ROD IRON	3
RODS	1
ROLL TOBACCO	1
ROPE	2
ROSIN	7
RUE	1
RUG + WOOLLEN CLOTH + SERGE	1
RUGS	3
RUGS + LINEN + WOOLLEN + MERCERY	1
RUGS + PIECES	1
RUSSIA LEATHER CHAIRS	1
RYE	5
SACK LEES	1
SACKCLOTH	2
SACKING	3
SADDLE TREES	1
SADDLES	1
SADDLES + BRIDLES	1
SADLERS WARE	1
SAIL CANVAS	1
SALMON	2
SALT	5
SALT PAN	1
SALTERY	8
SALTERY + DYEING WOOD	1
SAND	5
SCYTHES	3
SCYTHESTONES	1
SEEDS	2
SERGE	21
SERGE + HABERDASHERY	2
SERGE + LINEN	1
SERGE + MERCERY	2
SERGE + STOCKINGS	1
SERGE + STUFFS	1
SERGE + WORSTED STUFF	2

SHEEP + GOAT SKINS	1
SHEEP PELTS	1
SHEEPS BLUE	2
SHEEPS LEATHER	4
SHEEPS PELTS UNDRESSED	1
SHEEPSKINS	2
SHERRY	2
SHOES	4
SHOT	53
SHOT + LEAD	1
SHOT + LEAD WEIGHTS	1
SHREDS	4
SKINS	1
SMALL DEAL BOXES	1
SMALL WARES	1
SMALTS	1
SMITHS BELLOWS	1
SOAP	149
SOAP + BRANDY	2
SOAP + CANDLES	8
SOAP OIL	1
SOW IRON + IRONWARE	1
SPANISH + PORT WINE	11
SPANISH ROSIN	1
SPANISH WINE	282
SPANISH WINE + PORT WINE	5
SPANISH WINE LEES	1
SPANISH WOOL	4
SPARS	1
SPIRITS	2
SPIRITS + E BRANDY	2
SPOKES	1
SQUARE BOTTLES	1
STALLS WITH THEIR MATERIALS	1
STARCH	2
STEEL	14
STEEL + IRONMONGERS WARE	1
STEEL + IRONWARE	1
STEEL + NAILS + IRONWARE	1
STEEL HEMP	1
STEEL NAILS + IRONWARE	1
STEMS	1
STERLING	2
STETIZE LAIONS	1
STOCKINGS	1
STONE	1
STONE PITCH	1
STRONG WATER	2
STRONG WATER + VINEGAR	2
STRONG WATERS	6
STRONG WATERS + BRANDY	1
STRONG WATERS + E BRANDY	1
STRONG WATERS + E BRANDY + VINEGAR	1
STRONG WATERS + VINEGAR	4

SUGAR	4
SUGAR CANDY	1
SWEEPING BRUSHES	1
SWEET POWDER	1
SWEETMEATS	2
TABLE BOARDS	4
TABLES	1
TALLOW	13
TANNED HIDES	34
TANNED HORSE SKINS	1
TANNED LEATHER	3
TAR	28
TEAZLES	16
THREAD	2
THREADS	1
TICKING	1
TIMBERSTUFF	2
TIN	18
TIN PANS	1
TIN WARE	5
TOBACCO	361
TOBACCO + BULK	1
TOBACCO + BULKE	1
TOBACCO DUST	3
TOBACCO PIPE CLAY	8
TOBACCO PIPES	6
TOBACCO STEMS	35
TOW	1
TOW + ENDS	1
TOY GOODS	1
TRAIN	1
TRAIN OIL	81
TREACLE	1
TREFOIL SEED	1
TREFOIL SEEDS	1
TRUNKS	2
TWIGS	2
TWINE + CORDAGE	1
TWIST TOBACCO	1
UPHOLSTERY	9
UPHOLSTERY + MERCERY	2
UPHOLSTERY WARE	1
VARNISH	1
VERJUICE	4
VINEGAR	36
VINEGAR + OIL	1
VINEGAR + STRONG WATERS	8
WEARING APPAREL	8
WEARING APPAREL + BOOKS	3
WEARING APPAREL + HOUSEHOLD GOODS	2
WEARING APPAREL + LINEN + WOOLLEN	2
WEEK YARN	10
WEEK YARN + CORDAGE	1
WHALEBONE	8

WHEAT	4
WHISKS	21
WHISKS + BRUSHES	1
WHITE HERRINGS	1
WHITE LEAD	2
WHITE LEATHER	8
WHITE SALT	1
WHITE SHEEPS LEATHER	1
WHITING	1
WICKYARN	6
WICKYARN + CORDAGE	1
WINDOW GLASS	3
WINE	3
WINE LEES	3
WIRE	12
WOOD FOR JOINERS	3
WOODEN CANES	1
WOODEN SCREENS	1
WOODEN WARE	8
WOOL	37
WOOL + FLOCKS	3
WOOL CARDS	36
WOOL FLOCKS	2
WOOLLEN	2
WOOLLEN + BAY YARN	1
WOOLLEN + MERCERY	2
WOOLLEN CLOTH	1
WOOLLEN CLOTH + SERGE	4
WOOLLEN DRAPERY	2
WOOLLEN GOODS	1
WOOLLEN YARN	4
WORMS + STILLS	1
WORSTED STUFF	1
WORSTED STUFF + TICKING	1
WORSTED STUFF + SERGE	1
WORSTED YARN	3
WROUGHT IRON	9
XXX	3
YELLOW EARTH	2
YELLOW OCHRE	2
Total	**5393**

Appendix 3: voyages inwards by commodity class.

Voyages entering Gloucester by commodity class by area, sample year

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	111	164	91	182	118	61	96	54	225
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	17	4	0	3	1	7	5	0	17
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	1	1	3	0	1	1	0	0	5
SWN + NTH	0	0	6	0	3	0	0	0	7
CRD	5	0	0	0	4	0	0	1	8
Wye	15	15	4	0	25	0	0	13	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	0	1	1	1	1	1	0	-	1
	149	185	105	186	153	70	101	68	294

Percentage number of voyages entering Gloucester by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	49	73	40	81	52	27	43	24	225
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	100	24	0	18	6	41	29	0	17
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	20	20	60	0	20	20	0	0	5
SWN + NTH	0	0	86	0	43	0	0	0	7
CRD	100	0	0	0	50	0	0	13	8
Wye	48	48	13	0	81	0	0	42	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	0	100	100	100	100	100	0	-	1
									294

Voyages entering Gloucester by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	74	89	87	98	77	87	95	79	225
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	11	2	0	2	1	10	5	0	17
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	1	1	3	0	1	1	0	0	5
SWN + NTH	0	0	6	0	2	0	0	0	7
CRD	3	0	0	0	3	0	0	1	8
Wye	10	8	4	0	16	0	0	19	31
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	0	1	1	1	1	1	0	-	1
	100	100	100	100	100	100	100	100	294

Voyages entering Bridgwater by commodity class by area, sample year

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	13	32	8	28	27	3	19	20	32
Severn	11	17	16	8	13	1	13	5	20
N.Somerset	0	1	1	0	0	3	0	0	4
N. Devon	1	4	4	3	1	4	1	1	10
N. Cornwall	0	0	8	0	0	1	0	0	8
Pemb/Carm	10	0	47	0	0	2	1	0	47
SWN + NTH	84	5	179	0	3	0	1	8	180
CRD	-	-	-	-	-	-	-	-	-
Wye	1	4	3	0	9	0	0	8	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	4	3	21	4	0	2	9	3	24
Unknown	-	-	-	-	-	-	-	-	-
	124	66	287	43	53	16	44	45	336

Percentage number of voyages entering Bridgwater by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	41	100	25	88	84	9	59	63	32
Severn	55	85	80	40	65	5	65	25	20
N.Somerset	0	25	25	0	0	75	0	0	4
N. Devon	10	40	40	30	10	40	10	10	10
N. Cornwall	0	0	100	0	0	13	0	0	8
Pemb/Carm	21	0	100	0	0	4	2	0	47
SWN + NTH	47	3	99	0	2	0	1	4	180
CRD	-	-	-	-	-	-	-	-	-
Wye	9	36	27	0	82	0	0	73	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	17	13	88	17	0	8	38	13	24
Unknown	-	-	-	-	-	-	-	-	-
									336

Voyages entering Bridgwater by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	10	48	3	65	51	19	43	44	32
Severn	9	26	6	19	25	6	30	11	20
N.Somerset	0	2	0	0	0	19	0	0	4
N. Devon	1	6	1	7	2	25	2	2	10
N. Cornwall	0	0	3	0	0	6	0	0	8
Pemb/Carm	8	0	16	0	0	13	2	0	47
SWN + NTH	68	8	62	0	6	0	2	18	180
CRD	-	-	-	-	-	-	-	-	-
Wye	1	6	1	0	17	0	0	18	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	3	5	7	9	0	13	20	7	24
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	336

Voyages entering Minehead by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	16	51	18	47	36	7	24	24	56
Severn	3	7	10	6	0	0	1	4	11
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	2	0	1	0	0	0	0	3
N. Cornwall	0	0	3	0	0	0	0	0	3
Pemb/Carm	29	3	92	1	0	0	3	1	100
SWN + NTH	11	4	131	1	7	0	1	11	135
CRD	20	17	0	0	0	0	7	2	22
Wye	2	4	1	1	5	0	0	11	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	3	7	3	0	0	3	2	10
Unknown	-	-	-	-	-	-	-	-	-
	81	91	262	60	48	7	39	55	351

Percentage number of voyages entering Minehead by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	29	91	32	84	64	13	43	43	56
Severn	27	64	91	55	0	0	9	36	11
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	67	0	33	0	0	0	0	3
N. Cornwall	0	0	100	0	0	0	0	0	3
Pemb/Carm	29	3	92	1	0	0	3	1	100
SWN + NTH	8	3	97	1	5	6	1	8	135
CRD	91	77	0	0	0	0	32	9	22
Wye	18	36	9	9	45	0	0	100	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	30	70	30	0	0	30	20	10
Unknown	-	-	-	-	-	-	-	-	-
									351

Voyages entering Minehead by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	20	56	7	78	75	100	62	44	56
Severn	4	8	4	10	0	0	3	7	11
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	2	0	2	0	0	0	0	3
N. Cornwall	0	0	1	0	0	0	0	0	3
Pemb/Carm	36	3	35	2	0	0	8	2	100
SWN + NTH	14	4	50	2	15	0	3	20	135
CRD	25	19	0	0	0	0	18	4	22
Wye	2	4	0	2	10	0	0	20	11
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	3	3	5	0	0	8	4	10
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	351

Voyages entering Barnstaple by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	4	9	3	13	12	0	2	1	13
Severn	0	1	1	0	0	0	0	0	1
N.Somerset	2	0	1	3	0	0	0	0	4
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	1	0	4	0	0	0	0	0	5
Pemb/Carm	11	5	109	3	0	0	2	0	111
SWN + NTH	17	5	81	2	0	0	3	0	83
CRD	-	-	-	-	-	-	-	-	-
Wye	0	1	0	0	0	0	0	1	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	4	3	5	5	2	0	1	4	12
Unknown	5	5	31	2	0	1	2	1	36
	44	29	235	28	14	1	10	7	266

Percentage number of voyages entering Barnstaple by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	31	69	23	100	92	0	15	8	13
Severn	0	100	100	0	0	0	0	0	1
N.Somerset	50	0	25	75	0	0	0	0	4
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	20	0	80	0	0	0	0	0	5
Pemb/Carm	10	5	98	3	0	0	2	0	111
SWN + NTH	20	6	98	2	0	0	4	0	83
CRD	-	-	-	-	-	-	-	-	-
Wye	0	100	0	0	0	0	0	100	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	33	25	42	42	17	0	8	33	12
Unknown	14	14	86	6	0	3	6	3	36
									266

Voyages entering Barnstaple by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	9	31	1	46	86	0	20	14	13
Severn	0	3	0	0	0	0	0	0	1
N.Somerset	5	0	0	11	0	0	0	0	4
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	2	0	2	0	0	0	0	0	5
Pemb/Carm	25	17	46	11	0	0	20	0	111
SWN + NTH	39	17	34	7	0	0	30	0	83
CRD	-	-	-	-	-	-	-	-	-
Wye	0	3	0	0	0	0	0	14	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	9	10	2	18	14	0	10	57	12
Unknown	11	17	13	7	0	100	20	14	36
	100	100	100	100	100	100	100	100	266

Voyages entering Bideford by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	6	11	2	11	9	0	4	1	11
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	2	0	0	2	0	0	0	0	2
N. Devon	0	0	1	0	0	0	0	0	1
N. Cornwall	2	0	2	0	0	0	0	1	3
Pemb/Carm	4	3	85	2	0	0	3	0	89
SWN + NTH	10	5	69	2	0	0	3	1	76
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	2	0	0	0	0	2	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	5	4	12	3	2	0	1	4	21
Unknown	2	2	12	2	0	0	0	0	22
	31	25	185	22	11	0	11	9	227

Percentage number of voyages entering Bideford by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	55	100	18	100	82	0	36	9	11
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	100	0	0	100	0	0	0	0	2
N. Devon	0	0	100	0	0	0	0	0	1
N. Cornwall	67	0	67	0	0	0	0	33	3
Pemb/Carm	4	3	96	2	0	0	3	0	89
SWN + NTH	13	7	91	3	0	0	4	1	76
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	100	0	0	0	0	100	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	24	19	57	14	10	0	5	19	21
Unknown	9	9	55	9	0	0	0	0	22
									227

Voyages entering Bideford by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	19	44	1	50	82	0	36	11	11
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	6	0	0	9	0	0	0	0	2
N. Devon	0	0	1	0	0	0	0	0	1
N. Cornwall	6	0	1	0	0	0	0	11	3
Pemb/Carm	13	12	46	9	0	0	27	0	89
SWN + NTH	32	20	37	9	0	0	27	11	76
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	1	0	0	0	0	22	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	16	16	6	14	18	0	9	44	21
Unknown	6	8	6	9	0	0	0	0	22
	100	100	100	100	100	0	100	100	227

Voyages entering Ilfracombe by commodity class by area, sample year

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	2	5	6	5	2	2	0	5	8
Severn	0	1	2	1	0	0	0	0	2
N.Somerset	3	0	1	3	0	6	1	0	9
N. Devon	1	4	3	0	0	0	2	4	9
N. Cornwall	0	0	1	0	0	0	0	0	1
Pemb/Carm	0	0	32	1	0	0	0	0	32
SWN + NTH	11	0	35	2	0	0	0	0	46
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	0	0	1	2	0	4	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	2	7	13	2	0	0	2	6	21
Unknown	-	-	-	-	-	-	-	-	-
	19	17	93	14	3	10	5	19	132

Percentage number of voyages entering Ilfracombe by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	25	63	75	63	25	25	0	63	8
Severn	0	50	100	50	0	0	0	0	2
N.Somerset	33	0	11	33	0	67	11	0	9
N. Devon	11	44	33	0	0	0	22	44	9
N. Cornwall	0	0	100	0	0	0	0	0	1
Pemb/Carm	0	0	100	3	0	0	0	0	32
SWN + NTH	24	0	76	4	0	0	0	0	46
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	0	0	25	50	0	100	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	10	33	62	10	0	0	10	29	21
Unknown	-	-	-	-	-	-	-	-	-
								236	132

Voyages entering Ilfracombe by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	11	29	6	36	67	20	0	26	8
Severn	0	6	2	7	0	0	0	0	2
N.Somerset	16	0	1	21	0	60	20	0	9
N. Devon	5	24	3	0	0	0	40	21	9
N. Cornwall	0	0	1	0	0	0	0	0	1
Pemb/Carm	0	0	34	7	0	0	0	0	32
SWN + NTH	58	0	38	14	0	0	0	0	46
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	0	0	33	20	0	21	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	11	41	14	14	0	0	40	32	21
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	132

Voyages entering Padstow by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	5	6	2	6	6	2	3	1	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	2	2	0	1	0	0	-	2
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	4	1	4	1	1	0	0	0	8
SWN + NTH	3	0	106	1	0	0	0	0	106
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	4	2	7	0	0	0	3	2	7
Unknown	-	-	-	-	-	-	-	-	-
	16	11	121	8	8	2	6	3	129

Percentage number of voyages entering Padstow by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	83	100	33	100	100	33	50	17	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	100	100	0	50	0	0	-	2
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	50	13	50	13	13	0	0	0	8
SWN + NTH	3	0	100	1	0	0	0	0	106
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	57	29	100	0	0	0	43	29	7
Unknown	-	-	-	-	-	-	-	-	-
									129

Voyages entering Padstow by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	31	55	2	75	75	100	50	33	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	0	18	2	0	13	0	0	-	2
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	25	9	3	13	13	0	0	0	8
SWN + NTH	19	0	88	13	0	0	0	0	106
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	25	18	6	0	0	0	50	67	7
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	129

Voyages entering St. Ives by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	2	5	2	5	5	1	1	2	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	1	0	0	0	0	0	1
SWN + NTH	2	6	36	0	0	0	0	7	37
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	3	4	6	0	0	0	1	0	7
Unknown	-	-	-	-	-	-	-	-	-
	7	15	45	5	5	1	2	9	51

Percentage number of voyages entering St. Ives by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voayges
Bristol	33	83	33	83	83	17	17	33	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	100	0	0	0	0	0	1
SWN + NTH	5	16	97	0	0	0	0	19	37
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	43	57	86	0	0	0	14	0	7
Unknown	-	-	-	-	-	-	-	-	-
									51

Voyages entering St. Ives by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	29	33	4	100	100	100	50	22	6
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	2	0	0	0	0	0	1
SWN + NTH	29	40	80	0	0	0	0	78	37
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	43	27	13	0	0	0	50	0	7
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	51

Voyages entering Milford by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	10	14	2	12	12	4	12	8	14
Severn	1	1	1	0	2	0	1	2	3
N.Somerset	3	1	0	0	0	0	0	0	3
N. Devon	2	1	0	0	0	1	1	2	3
N. Cornwall	0	1	0	0	0	0	1	0	1
Pemb/Carm	0	0	4	0	0	0	0	0	4
SWN + NTH	0	0	3	0	0	0	0	1	3
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	1	0	0	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	6	8	7	5	2	0	6	10	21
Unknown	0	0	0	0	1	0	0	0	1
	22	26	18	17	17	5	21	23	54

Percentage number of voyages entering Milford by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	71	100	17	86	86	29	86	57	14
Severn	33	33	33	0	67	0	33	67	3
N.Somerset	100	33	0	0	0	0	0	0	3
N. Devon	67	33	0	0	0	33	33	67	3
N. Cornwall	0	100	0	0	0	0	100	0	1
Pemb/Carm	0	0	100	0	0	0	0	0	4
SWN + NTH	0	0	100	0	0	0	0	33	3
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	100	0	0	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	29	38	33	24	10	0	29	48	21
Unknown	0	0	0	0	100	0	0	0	1
									54

Voyages entering Milford by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	45	54	11	71	71	80	57	35	14
Severn	5	4	6	0	12	0	5	9	3
N.Somerset	14	4	0	0	0	0	0	0	3
N. Devon	9	4	0	0	0	20	5	9	3
N. Cornwall	0	4	0	0	0	0	5	0	1
Pemb/Carm	0	0	22	0	0	0	0	0	4
SWN + NTH	0	0	17	0	0	0	0	4	3
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	6	0	0	0	0	0	1
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	27	29	39	29	12	0	29	43	21
Unknown	0	0	0	0	6	0	0	0	1
	100	98	100	100	100	100	100	100	54

Voyages entering Carmarthen by commodity class by area, sample year

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	4	14	5	12	12	7	10	5	15
Severn	1	1	1	1	0	0	0	0	2
N.Somerset	1	0	0	0	0	0	0	0	1
N. Devon	0	4	0	0	0	2	0	0	4
N. Cornwall	0	0	3	0	0	0	0	0	3
Pemb/Carm	0	1	5	1	2	0	1	0	6
SWN + NTH	0	2	1	1	1	0	0	1	3
CRD	0	1	1	0	0	0	0	0	1
Wye	0	1	2	0	1	0	0	2	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	1	1	6	1	0	0	2	1	7
Unknown	1	0	0	0	0	0	0	0	1
	8	25	24	16	16	9	13	9	45

Percentage number of voyages entering Carmarthen by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	27	93	33	80	80	47	7	33	15
Severn	50	50	50	50	0	0	0	0	2
N.Somerset	100	0	0	0	0	0	0	0	1
N. Devon	0	100	0	0	0	50	0	0	4
N. Cornwall	0	0	100	0	0	0	0	0	3
Pemb/Carm	0	17	83	17	33	0	17	0	6
SWN + NTH	0	67	33	33	33	0	0	33	3
CRD	0	100	100	0	0	0	0	0	1
Wye	0	50	100	0	50	0	0	100	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	14	14	86	14	0	0	29	14	7
Unknown	100	0	0	0	0	0	0	0	1
									45

Voyages entering Carmarthen by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	50	56	21	75	75	78	77	56	15
Severn	13	4	4	6	0	0	0	0	2
N.Somerset	13	0	0	0	0	0	0	0	1
N. Devon	0	16	0	0	0	22	0	0	4
N. Cornwall	0	0	13	0	0	0	0	0	3
Pemb/Carm	0	4	21	6	13	0	8	0	6
SWN + NTH	0	8	4	6	6	0	0	11	3
CRD	0	4	4	0	0	0	0	0	1
Wye	0	4	8	0	6	0	0	22	2
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	13	4	25	6	0	0	15	11	7
Unknown	13	0	0	0	0	0	0	0	1
	100	100	100	100	100	100	100	100	45

Voyages entering Tenby by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	3	5	0	5	5	0	5	2	5
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	1	0	0	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	1	0	1	0	0	0	0	1	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	1	0	0	0	1	0	0	1	1
Unknown	0	1	1	2	0	0	1	0	2
	6	6	2	7	6	0	6	4	10

Percentage number of voyages entering Tenby by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	60	100	0	100	100	0	100	40	5
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	100	0	0	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	100	0	100	0	0	0	0	100	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	100	0	0	0	100	0	0	100	1
Unknown	0	50	50	100	0	0	50	0	2
									10

Voyages entering Tenby by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	50	83	0	71	83	0	83	50	5
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	17	0	0	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	17	0	50	0	0	0	0	25	1
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	17	0	0	0	17	0	0	25	1
Unknown	0	17	50	29	0	0	17	0	2
	100	100	100	100	100	0	100	100	10

Voyages entering Chepstow by commodity class by area, sample year

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	5	0	5	13	4	0	0	0	21
Severn	0	1	10	0	0	0	0	0	10
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	0	0	10	0	0	0	0	0	10
Pemb/Carm	1	1	0	0	0	0	0	0	2
SWN + NTH	0	1	4	0	0	0	0	0	5
CRD	0	1	1	0	5	0	0	0	6
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	10	0	0	0	0	0	10
Unknown	0	0	0	0	1	0	0	0	1
	6	4	40	13	10	0	0	0	65

Percentage number of voyages entering Chepstow by commodity class by area, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	24	0	24	62	19	0	0	0	21
Severn	0	10	100	0	0	0	0	0	10
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	0	0	100	0	0	0	0	0	10
Pemb/Carm	50	50	0	0	0	0	0	0	2
SWN + NTH	0	20	80	0	0	0	0	0	5
CRD	0	17	17	0	83	0	0	0	6
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	100	0	0	0	0	0	10
Unknown	0	0	0	0	100	0	0	0	1
									65

Voyages entering Chepstow by commodity class by area, as % of all voyages with each class, sample year.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	83	0	13	100	40	0	0	0	21
Severn	0	25	25	0	0	0	0	0	10
N.Somerset	-	-	-	-	-	-	-	-	-
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	0	0	25	0	0	0	0	0	10
Pemb/Carm	17	25	0	0	0	0	0	0	2
SWN + NTH	0	25	10	0	0	0	0	0	5
CRD	0	25	3	0	50	0	0	0	6
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	0	25	0	0	0	0	0	10
Unknown	0	0	0	0	10	0	0	0	1
	100	100	100	100	100	0	0	0	65

Appendix 4: Voyages with commodity classes, ten-year sample

Voyages clearing Bristol by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	-	-	-	-	-	-	-	-	-
Severn	449	590	394	694	431	304	377	162	893
N.Somerset	133	201	62	201	193	43	154	116	211
N. Devon	86	96	50	96	93	4	84	24	98
N. Cornwall	49	73	32	70	71	3	47	30	73
Pemb/Carm	96	155	39	150	139	61	138	83	155
SWN + NTH	41	77	22	76	57	18	71	24	77
CRD	90	150	83	151	109	44	128	24	155
Wye	64	74	42	81	60	38	56	37	107
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	107	120	64	119	110	27	29	52	147
Unknown	14	10	7	10	7	1	6	3	17
	1129	1546	795	1648	1270	543	1090	555	1933

Percentage number of voyages clearing Bristol by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	-	-	-	-	-	-	-	-	-
Severn	50	66	44	78	48	34	42	18	893
N.Somerset	63	95	29	95	91	20	73	79	211
N. Devon	88	98	51	98	95	4	86	24	98
N. Cornwall	67	100	44	96	97	4	64	41	73
Pemb/Carm	62	100	25	97	90	39	89	54	155
SWN + NTH	53	100	29	99	74	23	92	31	77
CRD	58	97	54	97	70	28	83	15	155
Wye	60	69	39	76	56	36	52	35	107
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	73	82	44	81	75	18	20	35	147
Unknown	82	59	41	59	41	6	35	18	17
									1933

Voyages clearing Bristol by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	-	-	-	-	-	-	-	-	-
Severn	40	38	50	42	34	56	35	29	893
N.Somerset	12	13	8	12	15	8	14	21	211
N. Devon	8	6	6	6	7	1	8	4	98
N. Cornwall	4	5	4	4	6	1	4	5	73
Pemb/Carm	9	10	5	9	11	11	13	15	155
SWN + NTH	4	5	3	5	4	3	7	4	77
CRD	8	10	10	9	9	8	12	4	155
Wye	6	5	5	5	5	7	5	7	107
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	9	8	8	7	9	5	3	9	147
Unknown	1	1	1	1	1	0	1	1	17
	100	100	100	100	100	100	100	100	1933

Voyages clearing Gloucester by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	1254	1170	852	1200	705	25	938	682	1569
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	107	118	124	92	88	1	58	64	170
N. Devon	14	10	20	7	0	1	1	6	23
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	3	3	3	0	1	0	2	3	4
SWN + NTH	7	8	11	3	6	0	3	1	12
CRD	20	27	23	27	3	0	0	7	36
Wye	29	26	61	14	15	0	4	3	70
Cross-Reg	45	46	57	47	14	1	14	13	68
Extra-Reg	1	1	1	1	0	1	0	0	2
Unknown	7	5	4	6	2	0	3	4	24
	1487	1414	1156	1397	834	29	1023	783	1978

Percentage number of voyages clearing Gloucester by commodity class by destination, 1695-1704

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	80	75	54	76	45	2	60	43	1569
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	63	69	73	54	52	1	34	38	170
N. Devon	61	43	87	30	0	4	4	26	23
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	75	75	75	0	25	0	50	75	4
SWN + NTH	58	67	92	25	50	0	25	8	12
CRD	56	75	64	75	8	0	0	19	36
Wye	41	37	87	20	21	0	6	4	70
Cross-Reg	66	68	84	69	21	1	21	19	68
Extra-Reg	50	50	50	50	0	50	0	0	2
Unknown	29	21	17	25	8	0	13	17	24
									1978

Voyages clearing Gloucester by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	84	83	74	86	85	86	92	87	1569
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	7	8	11	7	11	3	6	8	170
N. Devon	1	1	2	1	0	3	0	1	23
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	0	0	0	0	0	0	4
SWN + NTH	0	1	1	0	1	0	0	0	12
CRD	1	2	2	2	0	0	0	1	36
Wye	2	2	5	1	2	0	0	0	70
Cross-Reg	3	3	5	3	2	3	1	2	68
Extra-Reg	0	0	0	0	0	3	0	0	2
Unknown	0	0	0	0	0	0	0	1	24
	100	100	100	100	100	100	100	100	1978

Voyages entering Gloucester by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	596	740	500	902	592	374	511	198	1162
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	28	7	0	3	1	8	5	1	29
N. Devon	2	2	3	1	0	0	0	1	5
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	3	2	23	3	2	2	0	1	26
SWN + NTH	2	2	19	0	13	3	0	0	26
CRD	11	1	1	0	17	0	0	1	23
Wye	47	69	23	6	127	1	1	49	138
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	2	6	4	5	7	4	2	0	13
	691	829	573	920	759	392	519	251	1422

Percentage number of voyages entering Gloucester by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	51	64	43	78	51	32	44	17	1162
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	97	24	0	10	3	28	17	3	29
N. Devon	40	40	60	20	0	0	0	20	5
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	12	8	88	12	8	8	0	4	26
SWN + NTH	8	8	73	0	50	12	0	0	26
CRD	48	4	4	0	74	0	0	4	23
Wye	34	50	17	4	92	1	1	36	138
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	15	46	31	38	54	31	15	0	13
									1422

Voyages entering Gloucester by commodity class by area, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	86	89	87	98	78	95	98	79	1162
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	4	1	0	0	0	2	1	0	29
N. Devon	0	0	1	0	0	0	0	0	5
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	0	0	4	0	0	1	0	0	26
SWN + NTH	0	0	3	0	2	1	0	0	26
CRD	2	0	0	0	2	0	0	0	23
Wye	7	8	4	1	17	0	0	20	138
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	-	-	-	-	-	-	-	-	-
Unknown	0	1	1	1	1	1	0	0	13
	100	100	100	100	100	100	100	100	1422

Voyages clearing Bridgwater by commodity class by destination, 1695-1704

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	146	139	35	97	54	28	52	63	202
Severn	65	58	1	26	31	21	41	3	89
N.Somerset	8	3	6	3	0	3	1	4	14
N. Devon	28	12	13	12	0	2	5	2	35
N. Cornwall	1	0	0	1	0	0	0	2	4
Pemb/Carm	13	2	1	0	0	0	1	1	14
SWN + NTH	36	23	5	16	3	1	9	0	47
CRD	2	0	1	0	0	1	0	0	2
Wye	21	4	2	3	3	0	4	6	24
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	34	4	3	14	2	1	5	3	37
Unknown	-	-	-	-	-	-	-	-	-
	354	245	67	172	93	57	118	84	468

Percentage number of voyages clearing Bridgwater by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	72	69	17	48	27	14	26	31	202
Severn	73	65	1	29	35	24	46	3	89
N.Somerset	57	21	43	21	0	21	7	29	14
N. Devon	80	34	37	34	0	6	14	6	35
N. Cornwall	25	0	0	25	0	0	0	50	4
Pemb/Carm	93	14	7	0	0	0	7	7	14
SWN + NTH	77	49	11	34	6	2	19	0	47
CRD	100	0	50	0	0	50	0	0	2
Wye	88	17	8	13	13	0	17	25	24
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	92	11	8	38	5	3	14	8	37
Unknown	-	-	-	-	-	-	-	-	-
									468

Voyages clearing Bridgwater by commodity class by destination, as % of all voyages with each class, 1695-1704

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	41	57	52	56	58	49	44	75	202
Severn	18	24	1	15	33	37	35	4	89
N.Somerset	2	1	9	2	0	5	1	5	14
N. Devon	8	5	19	7	0	4	4	2	35
N. Cornwall	0	0	0	1	0	0	0	2	4
Pemb/Carm	5	1	1	0	0	0	1	1	14
SWN + NTH	10	9	7	9	3	2	8	0	47
CRD	1	0	1	0	0	2	0	0	2
Wye	6	2	3	2	3	0	3	7	24
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	10	2	4	8	2	2	4	4	37
Unknown	-	-	-	-	-	-	-	-	-
	101	100	100	100	100	100	100	100	468

Voyages entering Bridgwater by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	128	185	33	177	166	38	123	107	188
Severn	139	152	143	100	116	2	77	85	213
N.Somerset	2	3	1	2	0	8	0	3	14
N. Devon	3	21	13	11	2	24	5	3	44
N. Cornwall	0	0	60	0	0	8	0	1	61
Pemb/Carm	74	20	334	23	6	11	13	10	342
SWN + NTH	531	37	1381	12	21	3	3	74	1390
CRD	0	0	1	1	0	0	0	0	2
Wye	2	24	33	0	69	0	1	49	81
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	15	17	114	20	6	5	16	16	124
Unknown	3	1	3	3	1	0	0	1	6
	897	460	2116	349	387	99	238	349	2465

Percentage number of voyages entering Bridgwater by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	68	98	18	94	88	20	65	57	188
Severn	65	71	67	47	54	1	36	40	213
N.Somerset	14	21	7	14	0	57	0	21	14
N. Devon	7	48	30	25	5	55	11	7	44
N. Cornwall	0	0	98	0	0	13	0	2	61
Pemb/Carm	22	6	98	7	2	3	4	3	342
SWN + NTH	38	3	99	1	2	0	0	5	1390
CRD	0	0	50	50	0	0	0	0	2
Wye	2	30	41	0	85	0	1	60	81
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	12	14	92	16	5	4	13	13	124
Unknown	50	17	50	50	17	0	0	17	6
									2465

Voyages entering Bridgwater by commodity class by area, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	14	40	2	51	43	38	52	31	188
Severn	15	33	7	29	30	2	32	24	213
N.Somerset	0	1	0	1	0	8	0	1	14
N. Devon	0	5	1	3	1	24	2	1	44
N. Cornwall	0	0	3	0	0	8	0	0	61
Pemb/Carm	8	4	16	7	2	11	5	3	342
SWN + NTH	59	8	65	3	5	3	1	21	1390
CRD	0	0	0	0	0	0	0	0	2
Wye	0	5	2	0	18	0	0	14	81
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	2	4	5	6	2	5	7	5	124
Unknown	0	0	0	1	0	0	0	0	6
	100	100	100	100	100	100	100	100	2465

Voyages clearing Bideford by commodity class and destination, 1695-1704

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	38	61	71	38	13	44	14	3	107
Severn	7	21	12	0	0	1	0	0	24
N.Somerset	2	11	7	7	0	3	0	4	18
N. Devon	3	7	13	10	2	0	0	6	22
N. Cornwall	0	16	18	9	3	0	0	4	36
Pemb/Carm	8	56	2	17	1	7	7	3	82
SWN + NTH	0	78	16	27	7	6	6	1	102
CRD	0	10	0	0	0	1	1	0	10
Wye	0	2	1	0	0	0	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	15	26	23	43	1	11	3	1	98
Unknown	3	6	4	3	0	2	0	0	12
	76	294	167	154	27	75	31	22	514

Percentage number of voyages clearing Bideford by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	36	57	66	36	12	41	13	3	107
Severn	29	88	50	0	0	4	0	0	24
N.Somerset	11	61	39	39	0	17	0	22	18
N. Devon	14	32	59	45	9	0	0	27	22
N. Cornwall	0	44	50	25	8	0	0	11	36
Pemb/Carm	10	68	2	21	1	9	9	4	82
SWN + NTH	0	76	16	26	7	6	6	1	102
CRD	0	100	0	0	0	10	10	0	10
Wye	0	67	33	0	0	0	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	15	27	23	44	1	11	3	1	98
Unknown	25	50	33	25	0	17	0	0	12
									514

Voyages clearing Bideford by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	50	21	43	25	48	59	45	14	107
Severn	9	7	7	0	0	1	0	0	24
N.Somerset	3	4	4	5	0	4	0	18	18
N. Devon	4	2	8	6	7	0	0	27	22
N. Cornwall	0	5	11	6	11	0	0	18	36
Pemb/Carm	11	19	1	11	4	9	23	14	82
SWN + NTH	0	27	10	18	26	8	19	5	102
CRD	0	3	0	0	0	1	3	0	10
Wye	0	1	1	0	0	0	0	0	3
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	20	9	14	28	4	15	10	5	98
Unknown	4	2	2	2	0	3	0	0	12
	100	100	100	100	100	100	100	100	514

Voyages entering Bideford by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	57	72	16	70	75	0	40	5	82
Severn	12	6	13	5	0	0	0	0	16
N.Somerset	14	0	1	9	0	1	1	0	17
N. Devon	0	0	2	1	0	0	0	1	3
N. Cornwall	4	0	21	1	0	1	0	1	24
Pemb/Carm	56	13	611	25	2	1	14	1	646
SWN + NTH	58	29	581	5	1	0	11	6	592
CRD	-	-	-	-	-	-	-	-	-
Wye	1	2	3	0	1	0	0	4	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	55	27	104	15	15	1	12	16	136
Unknown	5	5	27	2	0	0	0	0	38
	262	154	1379	133	94	4	78	34	1558

Percentage number of voyages entering Bideford by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	70	88	20	85	91	0	49	6	82
Severn	75	38	81	31	0	0	0	0	16
N.Somerset	82	0	6	53	0	6	6	0	17
N. Devon	0	0	67	33	0	0	0	33	3
N. Cornwall	17	0	88	4	0	4	0	4	24
Pemb/Carm	9	2	95	4	0	0	2	0	646
SWN + NTH	10	5	98	1	0	0	2	1	592
CRD	-	-	-	-	-	-	-	-	-
Wye	25	50	75	0	25	0	0	100	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	40	20	76	11	11	1	9	12	136
Unknown	13	13	71	5	0	0	0	0	38
									1558

Voyages entering Bideford by commodity class by area, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	22	47	1	53	80	0	51	15	82
Severn	5	4	1	4	0	0	0	0	16
N.Somerset	5	0	0	7	0	25	1	0	17
N. Devon	0	0	0	1	0	0	0	3	3
N. Cornwall	2	0	2	1	0	25	0	3	24
Pemb/Carm	21	8	44	19	2	25	18	3	646
SWN + NTH	22	19	42	4	1	0	14	18	592
CRD	-	-	-	-	-	-	-	-	-
Wye	0	1	0	0	1	0	0	12	4
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	21	18	8	11	16	25	15	47	136
Unknown	2	3	2	2	0	0	0	0	38
	100	100	100	100	100	100	100	100	1558

Voyages clearing Padstow by commodity class by destination, 1695-1704

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	6	3	64	6	35	3	1	3	70
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	1	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	2	0	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	9	0	0	0	0	0	9
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	1	0	0	0	6	0	1	0	6
Unknown	-	-	-	-	-	-	-	-	-
	7	3	76	6	41	3	2	3	88

Percentage number of voyages clearing Padstow by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	9	4	91	9	50	4	1	4	70
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	100	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	100	0	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	100	0	0	0	0	0	9
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	17	0	0	0	100	0	17	0	6
Unknown	-	-	-	-	-	-	-	-	-
									88

Voyages clearing Padstow by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	86	100	84	100	85	100	50	100	70
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	1	0	0	0	0	0	1
N. Devon	-	-	-	-	-	-	-	-	-
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	-	-	-	-	-	-	-	-	-
SWN + NTH	0	0	3	0	0	0	0	0	2
CRD	-	-	-	-	-	-	-	-	-
Wye	0	0	12	0	0	0	0	0	9
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	14	0	0	0	15	0	50	0	6
Unknown	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	88

Voyages entering Padstow by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	38	47	34	46	43	4	25	8	52
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	0	0	0	0	0	1	1
N. Devon	1	7	11	1	3	1	0	2	11
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	5	1	38	1	1	1	0	0	42
SWN + NTH	21	3	370	1	3	0	0	6	372
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	16	2	33	0	0	2	12	0	33
Unknown	0	0	5	0	0	0	0	0	5
	81	60	491	49	50	8	37	17	516

Percentage number of voyages entering Padstow by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	73	90	65	88	83	8	48	15	52
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	0	0	0	0	0	100	1
N. Devon	9	64	100	9	27	9	0	18	11
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	12	2	90	2	2	2	0	0	42
SWN + NTH	6	1	99	0	1	0	0	2	372
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	48	6	100	0	0	6	36	0	33
Unknown	0	0	100	0	0	0	0	0	5
									516

Voyages entering Padstow by commodity class by area, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	47	78	7	94	86	50	68	47	52
Severn	-	-	-	-	-	-	-	-	-
N.Somerset	0	0	0	0	0	0	0	6	1
N. Devon	1	12	2	2	6	13	0	12	11
N. Cornwall	-	-	-	-	-	-	-	-	-
Pemb/Carm	6	2	8	2	2	13	0	0	42
SWN + NTH	26	5	75	2	6	0	0	35	372
CRD	-	-	-	-	-	-	-	-	-
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	20	3	7	0	0	25	32	0	33
Unknown	0	0	1	0	0	0	0	0	5
	100	100	100	100	100	100	100	100	516

Voyages clearing Tenby by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	25	14	24	20	11	18	16	0	42
Severn	3	3	35	2	1	1	1	1	35
N.Somerset	165	16	948	30	3	6	22	5	956
N. Devon	41	27	671	30	2	2	34	0	676
N. Cornwall	0	0	14	0	0	0	0	0	14
Pemb/Carm	1	0	5	1	0	0	0	0	6
SWN + NTH	5	1	11	3	0	0	0	0	13
CRD	3	1	34	11	0	6	0	0	35
Wye	1	0	6	1	0	1	1	1	6
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	8	2	99	3	1	5	3	0	104
Unknown	11	5	64	7	0	2	5	6	69
	263	69	1911	108	18	41	82	13	1956

Percentage number of voyages clearing Tenby by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	60	33	57	48	26	43	38	0	42
Severn	9	9	100	6	3	3	3	3	35
N.Somerset	17	2	99	3	0	1	2	1	956
N. Devon	6	4	99	4	0	0	5	0	676
N. Cornwall	0	0	100	0	0	0	0	0	14
Pemb/Carm	17	0	83	17	0	0	0	0	6
SWN + NTH	38	8	85	23	0	0	0	0	13
CRD	9	3	97	31	0	17	0	0	35
Wye	17	0	100	17	0	17	17	17	6
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	8	2	95	3	1	5	3	0	104
Unknown	16	7	93	10	0	3	7	9	69
									1956

Voyages clearing Tenby by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	10	20	1	19	61	44	20	0	42
Severn	1	4	2	2	6	2	1	8	35
N.Somerset	63	23	50	28	17	15	27	38	956
N. Devon	16	39	35	28	11	5	41	0	676
N. Cornwall	0	0	1	0	0	0	0	0	14
Pemb/Carm	0	0	0	1	0	0	0	0	6
SWN + NTH	2	1	1	3	0	0	0	0	13
CRD	1	1	2	10	0	15	0	0	35
Wye	0	0	0	1	0	2	1	8	6
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	3	3	5	3	6	12	4	0	104
Unknown	4	7	3	6	0	5	6	46	69
	100	100	100	100	100	100	100	100	1956

Voyages entering Tenby by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	28	55	7	53	36	8	38	21	55
Severn	3	5	3	4	1	0	1	2	6
N.Somerset	7	2	1	0	0	0	1	1	8
N. Devon	3	13	0	2	0	1	4	1	16
N. Cornwall	0	0	13	0	0	0	0	0	13
Pemb/Carm	0	2	1	0	0	0	0	0	2
SWN + NTH	2	4	7	0	1	0	0	11	15
CRD	0	0	0	1	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	5	3	0	2	0	2	6	11
Unknown	10	8	5	11	3	3	5	2	26
	53	94	40	71	43	12	51	44	153

Percentage number of voyages entering Tenby by commodity class by area, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	51	100	13	96	65	15	69	38	55
Severn	50	83	50	67	17	0	17	33	6
N.Somerset	88	25	13	0	0	0	13	13	8
N. Devon	19	81	0	13	0	6	25	6	16
N. Cornwall	0	0	100	0	0	0	0	0	13
Pemb/Carm	0	100	50	0	0	0	0	0	2
SWN + NTH	13	27	47	0	7	0	0	73	15
CRD	0	0	0	100	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	45	27	0	18	0	18	55	11
Unknown	38	31	19	42	12	12	19	8	26
									153

Voyages entering Tenby by commodity class by area, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	53	59	18	75	84	67	75	48	55
Severn	6	5	8	6	2	0	2	5	6
N.Somerset	13	2	3	0	0	0	2	2	8
N. Devon	6	14	0	3	0	8	8	2	16
N. Cornwall	0	0	33	0	0	0	0	0	13
Pemb/Carm	0	2	3	0	0	0	0	0	2
SWN + NTH	4	4	18	0	2	0	0	25	15
CRD	0	0	0	1	0	0	0	0	1
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	-	-	-	-	-	-	-	-	-
Extra-Reg	0	5	8	0	5	0	4	14	11
Unknown	19	9	13	15	7	25	10	5	26
	100	100	100	100	100	100	100	100	153

Voyages clearing Neath by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	14	7	16	3	11	0	2	11	36
Severn	0	1	8	0	1	0	0	0	8
N.Somerset	72	12	709	13	16	0	1	37	725
N. Devon	16	10	348	0	2	0	0	1	350
N. Cornwall	4	2	129	0	1	0	0	0	129
Pemb/Carm	0	0	6	0	0	0	0	1	6
SWN + NTH	1	1	0	1	1	0	0	1	1
CRD	0	0	3	0	14	0	0	0	17
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	0	0	1	0	0	0	0	0	1
Extra-Reg	4	5	98	1	12	0	1	2	107
Unknown	3	0	17	0	0	0	0	0	17
	114	38	1335	18	58	0	4	53	1397

Percentage number of voyages clearing Neath by commodity class by destination, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	39	19	44	8	31	0	6	31	36
Severn	0	13	100	0	13	0	0	0	8
N.Somerset	10	2	98	2	2	0	0	5	725
N. Devon	5	3	99	0	1	0	0	0	350
N. Cornwall	3	2	100	0	1	0	0	0	129
Pemb/Carm	0	0	100	0	0	0	0	17	6
SWN + NTH	100	100	0	100	100	0	0	100	1
CRD	0	0	18	0	82	0	0	0	17
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	0	0	100	0	0	0	0	0	1
Extra-Reg	4	5	92	1	11	0	1	1	107
Unknown	18	0	100	0	0	0	0	0	17
									1397

Voyages clearing Neath by commodity class by destination, as % of all voyages with each class, 1695-1704.

	Agric	Crafts	Extract.	Food	Metals	Fishery	Textiles	Wood	Total Voyages
Bristol	12	18	1	17	19	0	50	21	36
Severn	0	3	1	0	2	0	0	0	8
N.Somerset	63	32	53	72	28	0	25	70	725
N. Devon	14	26	26	0	3	0	0	2	350
N. Cornwall	4	5	10	0	2	0	0	0	129
Pemb/Carm	0	0	0	0	0	0	0	2	6
SWN + NTH	1	3	0	6	2	0	0	2	1
CRD	0	0	0	0	24	0	0	0	17
Wye	-	-	-	-	-	-	-	-	-
Cross-Reg	0	0	0	0	0	0	0	0	1
Extra-Reg	4	13	7	6	21	0	25	4	107
Unknown	3	0	1	0	0	0	0	0	17
	100	100	100	100	100	0	100	100	1397

Notes to the Introduction.

1 Willan, *Coasting trade*, remains the sole authority on the economics and direction of this subject. Despite its relative antiquity and the fact that certain elements and suppositions have been superseded by recent research, there has been little concerted effort towards addressing problematic interpretational areas or assessing Willan's national results. However, the basis of a corrective picture has been supplied by Andrews, 'Two problems', pp. 119-21; Wakelin, 'Trade on the river Severn', Chapter 1; Hussey, Milne, Wakelin and Wanklyn, *Summary*, introduction,

2 Bristol is also seen to provide provincial access to and comprehension in the various branches of the lucrative overseas trades and developed and centralised facilities for marketing, finance capital, and social and political interaction: Minchinton, `Bristol - metropolis', pp. 69-89; Barry, 'Cultural life of Bristol'.

3 Floud, and McCloskey,, *Economic History of Britain since 1700*, Vol I; Crafts, `English economic growth'; Crafts, 'Review of the evidence'; Crafts,*British economic growth*; Wrigley, *Continuity, chance and change.*

4 Crafts, 'New economic history', pp. 25-43.

5 Rostow, *Stages of economic growth.*

6 Crafts, *British economic growth*, pp. 142-3; Crafts, 'British industrialisation', p. 416; Crafts, 'New economic history', p. 29.

7 Berg, 'Revisions and rehabilitations', p. 57; Berg, *Age of manufactures*, (2nd ed.) pp. 27-34 and chapters 6 and 7; Hudson, *Regions and industries*; Berg and Hudson, 'Rehabilitating the industrial revolution', pp. 33-5; Hudson, *Industrial Revolution,* Chapter 4.; Hawke, 'Reinterpretations of the industrial revolution', pp. 54-9, 74-6; O'Brien, 'Modern conceptions', pp. 25-6; Jackson, 'Rates of growth', pp. 20-3.

8 See for example, Flinn, *Origins of the industrial revolution* Deane, *First industrial nation* and Hartwell,(ed.), *Industrial revolution.* For a more recent survey of the literature, Mathias, and Davis, (eds) *First industrial revolutions*; O'Brien and Quinault, *Industrial revolution and British society*; Berg, *Age of manufactures*, (2nd. ed.) Chapter 1.

9 Kerridge, *Agricultural revolution*; Jones, *Agriculture and the industrial revolution*; Chambers and Mingay, *Agricultural revolution*; Thirsk, (ed.) *Agrarian history of England and Wales, 1640-1750*, vol. V (i) and (ii) especially Thirsk, (ed.) *Agricultural change* and Chartres, *Agricultural markets*; Braudel, *Perspective of the world*, pp. 556-8.

10 The literature on proto-industrialisation is large and as Walton has commented 'almost achieved its own take-off into self-sustaining growth': Walton, 'Proto-industrialisation', p. 41. See, however, Thirsk, 'Industries in the countryside'; Mendels, 'Proto-industrialization'; Clarkson, 'Proto-industrialization'; Berg, Hudson and Sonenscher, 'Manufacture in town and country'; Medick, 'The proto-industrial family economy'; Houston and Snell, 'Proto-industrialisation?', pp. 473-92; Berg, *Age of manufactures* (1st ed.), pp. 77-86, 287-314; (2nd. ed.), pp. 66-70; Hudson, 'Regional perspective', pp. 24-8 and references; and the recent articles in *Continuity and change* especially Mayer, 'Proto-industrialisation', pp. 181-216 and Kriedte, Medick and Schlumbolm, 'Proto-industrialisation revisited', esp. pp. 217-21. See also Braudel, *Wheels of commerce*, pp. 297-308; Kriedte, *Industrialization before industrialization*; Kriedte, *Peasants, landlords and merchant capitalists*, pp. 70-91 and Ogilvie, 'Proto-industrialisation in Europe' for a wider context.

11 In comparative terms publications focussing on external trades have declined in relation to the total output of British economic and social literature: Harte, `Trends in publication', pp. 21-40., quoted by Price, `What did merchants do?', p. 267.

12 The case for the importance of overseas trade is strongly emphasised by Thomas, *Industrial revolution and the Atlantic economy*. See also O'Brien, 'Political pre-conditions', pp. 141-4; Berg, *Age of manufactures* (2nd. ed.), pp. 31-3, 116-35; Shammas, *Pre-industrial consumer*, pp. 76-112.

13 See for example Schumpeter, *English overseas trade statistics*; Davis, `English foreign trade, 1600-1700', and `English foreign trade, 1700- 1770' both reprinted in Minchinton, (ed.), *English overseas trade*; Mitchell and Deane, *Abstract of British economic statistics*; Deane and Cole, *British economic growth*, pp. 41-50.

14 Ashton, *Economic fluctuations*, p. 139.

15 Davis, *A commercial revolution*; Davis, *Industrial revolution and British overseas trade*, pp. 77-80. See also Davis, *English shipping industry*, especially Chapters 1 and 2.

16 The point is made by Clark,*Guide*, p.57. W.B. Stephens has equated periods of notional `decline' and `expansion' in provincial urban economies with the fluctuating returns of cloth exports in the seventeenth century Port Books and allied Customs documents. This does not assess the significance of home demand, or the influence of principal outports, such as Bristol, on the levels of domestic redistribution and consumption of cloth by coastal trade and landsale: Stephens, 'Cloth exports', pp. 228-48; 'Further observations', pp. 253-57; 'Trade trends at Bristol', pp. 156-61. See also Supple, *Commercial crisis and change*.

17 The thematic bibliography in Aldcroft and Freeman, *Transport in the industrial revolution*, pp. 210-222, provides an admirable survey of the literature too numerous to mention here.

18 See, for example, Chaudhuri's comments in , 'The `New Economic History", pp. 45-60.

19 Willan, *Inland trade*, pp. 76-106.

20 Chartres, *Internal trade*, p. 65.

21 Jackson, 'The ports', p.180.

22 Jackman, *Development of transport*; Pratt, *Inland transport and communication*; Pawson, *Transport and economy*; Aldcroft and Freeman (eds), *Transport in the industrial revolution*; Barker and Savage, *Transport in Britain*; Dyos and Aldcroft, *British transport*; Bagwell, *Transport revolution.*

23 Chartres, *Internal trade.*

24 The figures assembled by Deane and Cole and by Crafts have reinforced the position of internal trade as a lesser economic significator. Deane and Cole, *British economic growth*; Crafts, `British economic growth, 1700-1831', pp.177-99.

25 Chartres, *Internal Trade*, pp. 10-11.

26 Chartres, *Internal trade*, p. 11.

27 For example, Everitt, 'Country, county, and town'; Chartres, 'City and towns'; Wrigley, 'City and country'.

28 Thirsk, *Policy and projects*; McKendrick, Brewer, and Plumb, (eds), *Birth of a consumer society*; Weatherill, *Consumer behaviour*; Shammas, *Pre-industrial consumer*; Brewer and Porter, *Consumption.* See also Spufford, *Great re-clothing*; Lemire, 'Consumerism' and Lemire, *Fashion's favorite.*

29 Thirsk, *Policy and projects*, pp. 170-80; Weatherill, *Consumer behaviour*, introduction;

Shamass, *Pre-industrial consumer*, pp. 1-8 and passim. For the role of population change, see Wrigley and Schofield, *Population history of England*; Houston, *British population change.*

30 Chartres, `Road carrying in England', pp. 73-94 and Chartres, `On the road with Professor Wilson', pp. 92-9 provides reassessments of the importance of overland trade. See also the criticisms of the extent and expansion of pre-industrial road carrying in Gerhold, `London carrying trade', pp. 392-410; Gerhold, *Road transport before the railways*; and Gerhold, 'Packhorses and wheeled vehicles', pp.1-26. For a more traditional view, see Crofts, *Packhorse, waggon and post*, especially Chapter 4 and Wilson, *England's apprenticeship*, p. 43.

31 Chartres, `Road carrying in England', p. 77-80.

32 See for example, Turnbull, `Provincial road carrying', pp. 17-39 and Gerhold, *Road transport before the railways* for more recent critiques.

33 Hey, *Packmen.* See also Travers, `Trading patterns in the east Midlands', pp. 65-82, for a more localised reconstruction of overland routes. Turnpiking and its associated records is covered by Pawson, *Transport and economy* and on a regional scale by Marcy, 'Bristol's roads and communications'.

34 Much of Willan's initial work charts such developments: Willan, *River navigation*; Willan, 'Navigation of the Great Ouse'; Willan, *Don navigation*; Willan, 'Bath and the navigation of the Avon'; Willan, 'Chester and the navigation of the Dee'; Willan, 'Witham and Yare'; Willan, 'Salisbury and the navigation of the Avon'; Willan, 'Navigation of the river Weaver'; Willan, 'Navigation of the Thames and Kennet'; Willan, 'Navigation and trade of the Severn valley'; Willan, 'Yorkshire river navigation'. See also, Alsop, 'River Nene'; Barker, 'Sankey Navigation'; Cohne, 'Wye'; Course *Itchen navigation*; Cross, 'Salisbury Avon'; Davies, 'River trade of Montgomoryshire'; Denton and Lewis, 'River Tern'; Duckham, *Yorkshire Ouse*; Duckham, *Inland navigations*; Fairclough, 'River Lea'; Sharman, 'Warwickshire Avon'; Summers, *The Great Ouse*; Skempton, 'Canals and river navigations'; Skempton, 'English river navigations'; Tann, 'Yorkshire Foss'; Thacker, *Thames highway*; Unwin, 'Aire and Calder'.

35 Edwards and Hindle, `Transportation system of medieval England and Wales'; Langdon, 'Inland water transport in medieval England'; Edwards and Hindle, 'Comment: inland water transportation in medieval England'. See also Dyer, 'The hidden trade of the Middle Ages'.

36 Chartres, *Internal trade*, p. 43.

37 Gras, `Memorandum on the Port Books'; Gras, *Corn market*, especially pp. 95-129. Gras was hampered by the fact that many coastal Books had not been effectively catalogued.

38 Willan, *Coasting trade.*

39 Willan, *Coasting trade*, pp. 1-10. The point is elaborated by Clark, *Guide*, pp. 52-6; Lewis, `Welsh Port Books', pp. xxvi; Hoon, *English Customs system,* Astrom, 'Reliability of English Port Books'; Woodward, 'Port Books'; and Wakelin, `Trade on the river Severn', Chapter 2.

40 Virtually every provincial port has an historical study of varying scholarship and accuracy which relies to a greater or lesser extent upon studies of the coastal Port Books. For the better examples see: Davis, *Hull*; Jackson, *Hull*; Hinton, 'Boston'; Lewis and Wright, *Boston*; Metters, 'Kings Lynn'; Evans, 'Ipswich'; Redstone. 'Ipswich Port Books'; Webb, *Ipswich*; Andrews, 'Thanet seaports'; Andrews, 'Trade of Faversham'; Farrant, 'Harbours of Sussex'; Andrews, 'Chichester and the grain trade'; Lamb, 'Southampton'; Quinn and Ruddock, 'Port Books of Southampton'; Studer (ed.), *Port Books of Southampton*; Wiggs, 'Trade of Southampton' (the latter three works also rely on local Port Books); Thomas, *Portsmouth*; Tittler, 'Poole'; Stephens, *Exeter*; Hoskins, *Industry, Trade and People*; Newton, *Exeter*; Stephens, 'Plymouth and the Cornish ports'; Woodward, *Chester*; Craig, 'River Dee'; Craig, 'Port of Chester'; Jarvis, 'Chester and Liverpool'; Stephens, 'Overseas trade of Chester'; Parkinson, *Liverpool*; Hyde, *Liverpool and the Mersey*; Barker, 'Lancashire coal, Cheshire salt'; Jarvis, 'Lancaster'; Beckett, *Coal and tobacco*; Eaglesham, *Whitehaven*; Tyson, 'Whitehaven'; Williams, 'Whitehaven'. For the ports

of the Bristol Channel region see below.

41 Andrews, `Two Problems', pp. 119-22.

42 Andrews, 'Port of Chichester and the grain trade', pp. 93-105. See also sections in Thirsk (ed.), *Agricultural History of England and Wales*, vol. V (i) and (ii). McGrath, 'Marketing of food' also draws upon Port Book evidence to illustrate the provisioning of London.

43 Burt, 'Lead production', pp. 249-68 and Beynon, 'Lead mining industry of Cardiganshire' use data from the coastal Port Books to supply figures of development.

44 Jenkins, 'Redbrook', pp. 145-67; Day, 'The Costers', pp. 47-50; Day, *Bristol brass*, pp. 37-51; Avery, 'Brass and copper traffic'. See also Hamilton, *English brass and copper industries* and Barton *Copper mining* for an overview of the trade.

45 Nef, *Coal Industry*; Hatcher, *Coal industry*; Flinn, *Coal industry*; Evans 'Coal trade'; Symons *Llanelli*; Trott, 'Neath'; Williams, `Port Books of Swansea and Neath'; Dietz, `North-east coal trade'.

46 Stephens, 'Exchequer Port Books'. Stephens' brief article, the basis to his 'Cloth exports of provincial ports'; 'Further observations'; and 'Trade trends at Bristol', focuses upon exports and the overseas Port Books.

47 Weatherill, *Pottery trade*; Weatherill, `Growth of the pottery industry: new evidence'; Grant *North Devon pottery*.

48 Bettey, 'Livestock trade'; Woodward, 'Anglo-Irish livestock trade'.

49 Scantlebury, 'Pilchards'; Whetter, *Cornwall*, pp. 180 passim.

50 Woodward, '"Swords into Ploughshares"'. Lemire, 'Consumerism', argues for a substantial trade in secondhand clothes, but does not use Port Book evidence for the trade in 'old' textiles.

51 See for example Metters, 'Kings Lynn'; Woodward, *Chester* and Williams, *East Anglian ports*, which devote large sections to describing the merchant community in preference to what was actually traded.

52 The `source-based' approach has been pioneered by Lewis, (ed.), 'Welsh Port Books'; Lewis, 'Port Books of Cardigan', pp.21-49; Lewis, 'Port Books of Cardigan', pp.36-62; Lewis, 'Port Books of Cardigan', pp.83-114. See also, Hinton, (ed.), 'Boston', where there is some critical discussion of the source. Williams, 'A contribution to the commercial history of Glamorgan'; Williams, 'Further contributions to the commercial history of Glamorgan'; Evans, 'Carmarthen and the Welsh Port Books'; and Rees, 'Port Books' also reproduce coastal Port Book data extensively.

53 Bristol traded large cargoes coastwise. The 1699 Port Books contain 504 entries (491 shipments) recording 5,367 commodity descriptions (quantity, measure, goods, additional information). In total 29,532 segments of data are recorded.

54 Wakelin, 'Comprehensive computerisation', pp.109-15.

55 Wakelin, 'Comprehensive computerisation'; Wanklyn, 'Shrewsbury boats'; Wakelin, 'Trade on the river Severn'; Wanklyn, 'Bridgnorth'. See also Cox, 'Imagination and innovation'; Avery, 'Brass and copper'; Milne and Paul, 'Evolution of the Gloucester Port Books database'; Wakelin and Hussey, 'Gloucester Port Books database'; and Hussey, Milne, Wakelin, and Wanklyn, 'Summary'. Research pioneered at the University of Wolverhampton was enabled by substantial grants provided by the *Economic and Social Research Council* and the *Leverhulme Trust*. See Chapter 1 for a more thorough discussion of the process by which Port Books were rendered machine readable.

56 Crafts, `New economic history', p.31.

57 Andrews, `Two problems', p.120. Wakelin's work on the Severn has also had to bow to the exigencies of sampling, although the methodology adopted has been based on more considered criteria than those which have pertained in the past. In total Wakelin deals with only 28% of the extant Gloucester coastal Port Books (15% if Books earlier to 1637 are included): Wakelin, 'Trade on the river Severn', Chapter 2, especially pp. 78-81. For a more complete analysis of Gloucester Books see Hussey, Milne, Wakelin and Wanklyn, *Summary.*

58 This type of dual hegemony has been seen to form the commercial basis to other major pre-industrial centres. Gillespie for instance speaks of the 'double hinterland' of Dublin - its local and national influence, and its importance in north western England: Gillespie, 'Dublin', pp. 58- 65.

59 This is covered at length by most general studies of the port and town: Barrett, *Bristol*; Bettey, *Bristol observed*; Jones 'Growth of Bristol'; Little, *Bristol*; MacInnes and Wittard (eds), *Bristol and its adjoining counties* especially Part Two; Marcy, *Eighteenth century views of Bristol*; Minchinton, *Port of Bristol*, pp. 1-3; Minchinton, 'Bristol - metropolis', pp. 69-71; Sacks, *Widening gate*, esp. pp. 17-9; Vanes, *Port of Bristol*; Walker, *Bristol region*; Wells, *Port of Bristol*; Willan, 'Severn navigation'.

60 Sacks, *Widening gate*, pp. 353-7 gives a good overview of population change. The population of Bristol in the 1690's is also covered by Ralph and Williams, 'Inhabitants of Bristol', introduction. The national picture is described in Corfield, *English towns*; Clark, *Country towns*, p. 16; Chalklin, *Provincial towns*, pp. 18-25; Wrigley and Schofield, *Population history*, pp.532-3.

61 Minchinton, `Bristol - metropolis', pp. 82-5; Minchinton, *Tin Plate*; Roberts, `Dr. John Lane', pp. 22-5.; Cox, 'Imagination and innovation' records important role of Bristol capital in Darby's early enterprise. See also Day, *Bristol brass*, pp. 55-60; Stembridge, *Goldney*; Stembridge, 'Bristol-Coalbrookdale connection'.

62 The diversity of Bristol's industrial base is admirably illustrated by Sacks, *Widening gate*, p. 350. For individual sectors see Day, *Bristol brass*; Jackson, *Jackson, and Price, Bristol clay pipe makers;* Buckley, `Glass-houses of Bristol'; Weeden, `Bristol glass industry'; Hall, 'John Knight'; Hall, 'Temple Sreet sugar house'; Hall, 'Whitson Court sugar house'.

63 Barry, `Cultural life of Bristol'; Barry, 'Popular culture in Bristol'; Borsay, `Urban renaissance'; Borsay, *English urban renaissance*; Estabrook, 'Urbane and rustic Bristol'. See also Baigent, `Bristol society' for a later interpretation of Bristol's cultural centricity in the articulation of the region.

64 Minchinton, `Bristol - metropolis'.

65 Minchinton, 'Bristol - metropolis', pp. 88-9; Braudel, *Wheels of commerce*, p. 40.

66 Minchinton, `Bristol - metropolis', pp.169-171. Although Minchinton quotes von Thaller vicariously through Gras (*Corn Market*, p. 95-8) he does not directly use Christaller's model to explain the position of Bristol to the hinterland. See Christaller, *Central Places* discussed in Berry and Garrison `Functional bases of central-place hierarchy', 218-27.

67 Based on the estimate of Finlay and Shearer for London in 1700 at 490,000: 'Population growth', pp. 37-59. This compares unfavourably with Gregory King's figure of 527,560 for London and Westminster in 1695 and with Wrigley's estimate of 575,000 ('A simple model', p. 44). Bills of mortality suggest a higher figure ranging from 556,000 to 641,000: Harding, 'Population of London' pp. 112-3, 122-3. See also, Schwartz's illuminating discussion of the trends and diagnostic basis to metropolitan populations: *London*, pp. 125-55.

68 See Fisher,'London food market', pp. 46-64; Fisher, 'London as a centre of conspicuous consumption', pp. 37-50; McGrath, 'Marketing of food, fodder and livestock'; Chartres, 'Food consumption and internal trade', pp.168-98; Wrigley, 'A simple model', pp. 44-60; and Braudel, *Wheels*

of commerce, pp. 40-2. The 'metropolitanisation' of agrarian supply has also been recognised in earlier periods: Galloway and Murphy, 'Feeding the city', pp. 3-14. In addition, some account of London's general position with regard to internal trade is given in Chartres, 'Trade and shipping in the port of London', pp.29-47; Stern, 'Fish marketing in London', pp. 68-77; Stern, 'Cheese shipped coastwise to London', pp. 207-21 as well as more general studies of commodities: Nef, *Coal industry* and Gras, *Corn market*. Nuala Zabediah's recent analysis of London's importance in the overseas trades emphasises its domestic and Imperial centricity: 'London and the colonial consumer', pp.239-61

69 Hudson, 'Regional perspective', esp. pp. 20-3; Langton, 'Industrial revolution', pp. 160-2. See also Gregory, 'Production of regions' and Langton, 'Production of regions'.

70 See for example, Trigger, 'Determinants of urban growth' and the welter of books focussing on English urban history. Space prevents the listing of all works consulted: the following represent perhaps the most comprehensive introductions to the subject. Barry (ed.), *Tudor and Stuart town*; Borsay, (ed.), *Eighteenth century town*; Clark, *Early modern town*; Clark, *English county town*; Clark, *Impact of English towns*; Clark, *English provincial towns*; Clark and Slack, eds., *Crisis and order*; Clark and Slack, *English towns in transition*; Chalklin, *Provincial towns*; Clark (ed.), *County towns*; Corfield, *Impact of English towns*; Abrams, and Wrigley, eds, *Towns in societies*.

71 Corfield, 'Norwich'; Minchinton, 'Bristol- metropolis'.

72 Clark, Gaskin, and Wilson *English small towns*.

73 de Vries distinguishes between the individual study of a town, ('urban history') and a more progressive analysis of urban development, ('the history of urbanisation'): de Vries, *Urbanization*, p. 13 and pp. 85-120; Bairoch *Cities and economic development*; Bairoch, 'Urbanization and the economy'; Bairoch and Goertz, 'Impact of large cities'. See also de Vries, 'Measurement, description, and analysis of historical urbanization', pp. 43-60 and van der Woude, Hayami, and de Vries, (eds), *Urbanization in history*.

74 Everitt, 'Food market'; Everitt, 'Country, county, town'; Wrigley, 'City and country'; Chartres, 'City and towns'. See also Patten's work on urban systems in East Anglia: *English towns*, pp. 244-96.

75 Corfield, `Small towns, large implications'.

76 Noble, `Small towns within regional urban systems', pp. 29-38; Noble, `Growth and development', pp. 1-21.

77 See, however, Diederiks' work on the Netherlands,: Diederiks, 'Decentralized metropolis'.

78 For example Morris, *Fiennes*; Cox, *Magna Britannia*; Sherburn, (ed.), *Pope*, IV, pp. 201-5, reproduced in Bettey, *Bristol observed*. I thank Mrs R.H. Lewis for this reference. See also Barrett, *Bristol*, pp. 168, 184-5 where the views of Campbell (*Political survey*) and Defoe (*Tour*, although unacknowledged) are repeated verbatim.

79 Defoe, *Tour*, pp. 361-3. See Minchinton, 'Bristol - metropolis', pp. 70-4 and Willan, *Coasting trade*, p. 172.

80 Minchinton's argument, introduced in `Bristol - metropolis', is repeated in Minchinton, *Port of Bristol* and in many general works. See Little, *Bristol*; MacInnes and Wittard, (eds), *Bristol and its adjoining counties*, pp. 207-218; McGrath, 'Merchants and merchandise', pp. xviii- xix; Lobel, (ed.), *Historic towns*, vol. I; Sacks, 'Trade, society and politics', pp. 351-3; Sacks, *Widening gate*, pp. 52-3. For a different and somewhat earlier perspective see John, *Industrial south Wales*, pp. 38-40.

81 Minchinton uses coastal Port Books for 1698-9; 1733-4 and 1788/9 to supply raw figures of craft clearing Bristol: `Bristol - Metropolis', pp. 71-2. Variation over time and consistency of record especially in the later sample have been ignored. See also Minchinton, *Port of Bristol*, pp. 1-3. Willan's

sample of Port Books for Bristol and its trading partners is similarly arbitrary: Willan, *Coasting trade*, pp. 73-6, 81-4, and Chapter X, especially pp. 171-4.

82 Minchinton cites examples of the monopolisation and cartelisation of certain trades - iron, wire and glass are explicitly emphasised - to reinforce the thesis of Bristol's commercial and industrial centricity. However, these are not fully substantiated by quantitative evidence or linked in any substantive fashion to the trade of Bristol as a whole: `Bristol - Metropolis', pp. 73-82.

83 The phrase is from Chartres, 'Food consumption and internal trade', p. 191.

84 See Minchinton, *Trade of Bristol*, pp. 3-10; Atkinson, `Bristol enterprise'; Sacks, *Widening gate*, pp. 251-77.

85 See MacInnes, *Gateway of empire*; Minchinton, 'Trade of Bristol', p. xix; Lynn, 'Palm oil trade', p. 359.

86 See Vanes, *Port of Bristol*; Vanes, 'Overseas trade of Bristol'; McGrath, 'Merchants and merchandise'; McGrath, *Merchant Venturers*; McGrath, 'Merchant Venturers and the Port of Bristol'; McGrath, 'Society of Merchant Venturers'; Minchinton, 'Politics and the Port of Bristol'; Minchinton, 'Trade of Bristol'.

87 This is based largely upon reproductions of unannotated data culled from coastal Port Books and allied local port records: McGrath, *Merchants and Merchandise*, pp. 191-2; 232-4. Minchinton reproduces Anchorage statistics for coastways traffic without quantifying or integrating these fully into a discussion of the port's regional importance: Minchinton *Trade of Bristol*, p.177.

88 Crawford, *Bristol and the wine trade*; Pares, *West-India fortune*; Morgan, `Bristol merchants and the colonial trades'; Morgan, 'Bristol and the Atlantic trade'; MacInnes, *Tobacco trade*; MacInnes, *Gateway to empire*; Richardson, 'Bristol, Africa' vols I and II; Richardson, *Bristol slave traders*.

89 Sacks, 'Trade, society and politics' (1977), p.342 and passim applies Minchinton's metropolitan thesis to the earlier trade of the town. See also Sacks, 'Trade, society and politics' (1985), vol. 1, pp. 309-14 and vol II, Appendix I, pp. 723-44; Sacks, *Widening gate*, pp. 52-3, 351-2, passim.

90 Morgan's views are presented in 'Bristol and the Atlantic trades', pp. 625-48, and especially his *Bristol and the Atlantic trades*, Chapter 3 and conclusion. The decline of Bristol is also covered in Atkinson, 'Decline of an industrial spirit'. Notable Bristol overseas merchants are described in Vanes, (ed.), 'Ledger of John Smythe'; Browne, *Marchants avizo*; McGrath, *John Whitson*; McGrath, 'Wills of Bristol merchants'; McGrath, 'Merchants and merchandise', pp. xix, 207-14; Minchinton, 'Trade of Bristol', pp. 82- 125. The later eighteenth and nineteenth business community of Bristol is covered by Harvey and Press, (eds.), *Business history of Bristol*.

91 In fairness most general histories of the Bristol Channel ports are either very dated or not aimed at an academic audience. However, see Chappell, *Cardiff*; Rees, *Cardiff*; Dawson, *Commerce and customs*; Jones, *Swansea*; Williams, *Swansea*; Treble, *Tenby*; Rees, *Milford*; Pearse, *Ports and harbours of Cornwall*; Matthews, *St. Ives*; Watkins, *Bideford*; Chanter, *Barnstaple*; Oppenhein, *Maritime history of Devon*; Wedlake, *Watchet*; Hancock, *Minehead*; Murless, *Bridgwater*.

92 Willan, *Coasting trade*, pp. 167-180. This section provides staple data for a number of studies. See Williams, 'Cardiff'; Williams, 'Carmarthenshire's maritime trade'; Williams, 'Commercial history of Glamorgan'; Williams, 'Further contribution'; Williams, 'Economic and social history of Glamorgan'. See also Williams, 'Swansea and Neath'. Analyses involving the Port Books of the sixteenth century are largely dependent upon Lewis, *Welsh Port Books*. See Lewis, 'Port Books of Cardigan'; Rees, 'Port Books of Cardiff'.

93 Nef, *Coal industry*, II, Appendix D, pp. 367-78; Evans, 'Welsh coal trade', Appendix A; Symons, *Llanelli*, pp. 250-8, 333-8; Trott, 'Neath'; Williams, 'Swansea and Neath'; Hatcher, *Coal*

industry.

94 Grant, *North Devon pottery.* pp. 85-100. Her reservations concerning the size and intractability of the Port Books are recognised in Grant, 'Port Books', pp. 61-3.

95 George, 'Pembrokeshire sea-trading', pp. 1-39. Much of this is focussed on the sixteenth century where records are limited and available in Lewis *Welsh Port Books.*

96 Especially Wakelin, 'Trade on the river Severn' and Hussey, Milne, Wakelin and Wanklyn, *Summary.*

97 For example, Willan, *River Navigation*; Willan, 'Trade of the Severn Valley', pp. 68-79; Davies, 'River trade of Montgomeryshire'; Stevens, 'Wye'. Latrerwork has explicitly sought to quantify trade: Wanklyn, 'Shrewsbury Boats', pp. 34-58; Wanklyn, 'Bridgnorth', pp. 37-64; Wakelin, 'Trade on the river Severn', Chapter 3; Hussey, Milne, Wakelin and Wanklyn, *Summary.*

98 Wakelin's exhaustive survey of the Severn trades, for example, is almost wholly reliant upon the reliability of the Gloucester coastal Port Books over time. Records from other ports, notably Bristol, Chepstow and the Somerset centres, have been limited to the computerisation of a single year for the former two ports: Wakelin, 'Trade on the river Severn', pp. 78-81.

99 The handling of Port Book data is discussed in Wakelin, 'Comprehensive computerisation'; Wakelin, 'Trade on the river Severn', Chapter 2; Milne and Paul, 'A flexible model for Port Book studies'; Hussey, Milne, Wakelin and Wanklyn, *Summary*, Introduction. The application of such models to the Bristol Channel ports is outlined below in Chapter 1 and Chapter 5.

100 From a vast literature on this subject, Hudson, *Regions and industries*, and the articles therein contained; Langton, 'Industrial revolution and the regional geography of England', especially pp. 145-50; and the Longmans series of monographs (Rowlands, *West Midlands*, Hey, *Yorkshire*; and Bettey, *Wessex*, for example), provide useful introductions. Many relevant debates, too numerous to list here, are contained within the pages of the *Journal of Regional and Local studies.*

101 See Chapter 1, Table 1.1.

102 See Southwell's estimates in Willan, *River navigation*, pp. 3-5; Willan, *Coasting trade*, pp. xiv-xvi. This view is repeated with reservations by Chartres, *Internal trade*, pp. 42-4; Armstrong and Bagwell, 'Coastal shipping', pp. 142-3; Jackson, 'Ports', pp. 180-1.

103 Willan, *River navigation*, pp. 114-30 gives an indication of transport savings occasioned by improvement. Davis, *English shipping industry*, pp.60-1 argues that greater carrying capacity, crew savings, and quicker turn-around times made coasting a more efficient operation in the later seventeenth century.

104 For overland trade from Bridgwater to south Devon, see E134 23&24 Chas 2 Hil 18 and from Exeter to Bridgwater SRO DD/X/PG/1 W 51/3/1, f. 5v. Overland trade is regarded by Hoskins as rather less important to the trade of Exeter than coastal shipments: Hoskins, *Industry, trade and people*, pp. 28-36, 42-4, 63-4, 70-4. See also Clark, *Exe estuary*, pp. 76-8.

105 For certain trades the parameters of the region are too limited. Trade in lead (with Chester, Aberdovey, and north Wales); in coal (to the southern coasts of Cornwall and Devon); and in salt (with Liverpool) were important extra-regional trades. There is also a case for including trade with Ireland. For all ports, and especially the staple wool ports of Somerset and north Devon, Ireland was a focus of trade. See Woodward, 'Anglo-Irish livestock trade'; Bowden, *Wool trade*, pp. 60-2, 71-3, 206-10, 215-7. It has been excluded from the study owing to the nature of its trades and that unquantifiable number of vessels bound to and returning from Ireland used it as a victualling stopover in the transatlantic trades.

106 See Marcy, *Eighteenth-century views of Bristol*; Bettey, *Bristol Observed*; Barrett, *Bristol*, pp.

168-9 for contemporary observations: the Mounts Bay to Milford region is roughly accepted by both Willan and Minchinton as Bristol's home market served by coasting: Willan, *Coasting trade*, pp. 172-6; Minchinton, 'Bristol - metropolis'.

107 At many points Willan argues that trade between Bristol and Gloucester tailed off after 1730 without acknowledging that this represented more a change in administrative competence than falling levels of commerce: *Coasting trade*, esp. pp. 174-6.

108 Wakelin, `Trade on the river Severn', p.27; Wanklyn, `Shrewsbury boats', pp. 34-5; Farr, 'Severn navigation and the trow'.

109 The Holms were islands belonging to the jurisdictions of Cardiff and Bristol respectively important in the administration, recording and conduct of coasting in their own right. In 1729, the islands were deemed the terminal point of the *river* Severn. As river traffic did not need to proceed under the Coquet and Bond system this effectively undermined the recording of coastal traffic plying between above-Holms ports. See Chapter 1 passim.

110 Wakelin, `Trade on the river Severn', pp.25-9; 99-112; see also Rowlands, 'Continuity and change', pp. 113-23 for the study of the west Midlands as the central industrialising core to this region.

111 See Hoon, *English Customs system*, p. 193: 'there was no other outport, with the exception of Liverpool where a merchant could dispose of his entire cargo in bulk; instead he was obliged to sell part of it in London and take on part of his outgoing shipment there also', following Westerfield, *Middlemen*, pp. 426-7 and ultimately Defoe, *Tour*, p. 363.

112 See Trinder's discussion of the patterns and impacts of transport: *Industrial revolution in Shropshire*, pp. 104-19 and Wakelin's quantification of the upstream tobacco trade: 'Trade on the river Severn', pp. 211-45.

113 See Trinder and Cox, *Yeomen and colliers* for a selection of probate inventories. The goods held by mercers, for example, indicate the existence of a sophisticated distributive economy (*Yeomen and colliers*, pp. 20-41, 113-4 and inventories numbers 107 (Justice, pp. 278-80); 126 (Johnson, pp. 302-8); 132 (Wright pp. 314-21); 170 (Barnes, pp. 357-8); and 174 (Sockett, pp. 362-3)). The range of west Midlands inventories currently being computerised by Mrs Nancy Cox as part of the *Dictionary of traded goods* project at Wolverhampton University emphasises this facility for the wider Severnside community and beyond.

114 Many boats specialised in the long-distance trade beyond Bristol to Somerset, Devon and south Wales, frequently in Droitwich salt: Wakelin, `Trade on the river Severn', pp. 181-96. Such vessels were often involved independently in the Welsh coal trade. See also Chapter 5.

115 In the absence of more consistent quantitative research, it would be premature to adopt Willan's tenet that the trade of Gloucester was that of Bristol writ small: Willan, *Coasting Trade*, p. 174.

116 Willan, *River navigation*, pp. 36-7, 45-6; Hadfield, *Canals of south Wales and the border*, pp. 185-6; Jenkins, `Redbrook'; Day, *Bristol brass*, pp. 49-50. Andrews, 'Chepstow' gives a brief overview of the rise of the port by 1700.

117 See Hechter, *Internal colonialism*, Payton, *Cornwall*, Chapter 1; Evans, 'Two paths', p.202.

118 Emery, `Wales', esp. 409-21; Bowen, *Wales*; Osborne, 'Glamorgan agriculture', pp. 387-405; Davies, *Economic history of south Wales*.

119 George, 'Pembrokeshire sea-trading'; Williams, 'Carmarthenshire's maritime trade', pp.61-70.

120 Nef, *Coal industry*; Hatcher, *Coal industry*; Aston, *Coal industry*; and Evans, 'Welsh coal trade' are the best overviews. See also Rees, *Industry*, pp. 79-115; Symons, *Llanelli;* Trott, 'Neath'; Edwards,

'Coal industry in Pembrokeshire'; and Phillips, *Pioneers.* Willan, *Coasting trade,* gives figures of coal shipments but his analysis is weighted towards the east-coast trades. Other studies have been limited in either dealing with individual ports or in their concentration upon the more tractable earlier period: see Lewis, *Welsh Port Books;* Rees, 'Port books for Cardiff and Swansea and Neath', pp.69-91. Williams, 'Port Books of Swansea and Neath', pp.192-209.

121 Rees, *Industry, pp. 302-8; 521-78; Lewis,* Lead mining; Lewis, 'Some aspects of lead-mining', pp.177-90; Trott, 'Neath'; Beynon, 'Lead mining industry of Cardiganshire'.

122 See Willan Coasting trade, *pp. 167-71.*

123 See Mann, *Cloth Industry,* pp. 63-88, 255-79, Appendix 1; Hoskins, *Industry and People;* Ponting, *West of England cloth industry* pp.31-33; Ponting, *Woollen industry of south west England.*

124 Bettey, 'Livestock trade', pp. 123-8; Skeel, 'Cattle trade'. See also Woodward, 'Anglo-Irish livestock trade'.

125 Harrison, 'South west', pp. 370-3; Kerridge, *Agricultural revolution, pp. 115-6.*

126 The seed crops (clover, rape, and also flax and hemp), dyeplants (woad), teasels and vegetables (cabbage plants in particular), were important products of the drained Levels and featured in the coastal trade of Bridgwater and Minehead: see Port Books; Chapter 3 below; Williams, *Somerset Levels;* Thirsk, *Agricultural regions, p. 55.*

127 Hoskins, *Industry, trade and people,* pp. 30-1.

128 Harrison, 'South-west', pp. 376-7; Stanes, 'Devon agriculture', pp. 50-3. Watkins, *Bideford,* pp. 68-74 and Gribble, *Barnstaple* give general histories of trade of both ports. Barnstaple and Bideford were members of the customs Port of Exeter until Barnstaple was granted independent headport status in 1672 with responsibility for Bideford. Bideford was separated in 1707: Williams, *Descriptive list.*

129 Treasury Papers PRO T1/278, f. 30 reproduced in Hoskins, *Industry, trade and people,* p. 162. Bideford imported and re-exported about 20% the amount of tobacco traded by Bristol. See Minchinton, 'Trade of Bristol', p.13, for comparative statistics for Bristol. Tobacco statistics are also reproduced in Morgan, 'Bristol and the Atlantic trade', pp. 642-6 and Price and Clemens, 'A revolution of scale in overseas trade', pp. 39-40. The Newfoundland trade is discussed briefly in Stephens, 'West country ports' and Starkey, 'Devonians and the Newfoundland trade'.

130 Defoe, *Tour,* pp. 247-8, emphasises the importance of Barnstaple in the domestic and Irish trades.

131 Grant, *North Devon pottery;* Watkins, *North Devon pottery;* Grant and Jemmett, 'Pipes and pipe-making in Barnstaple, Devon'; Rolt, *The potters' field.*

132 See Chapter 3 for a more thorough discussion. Lamplugh, *Ilfracombe,* p. 23 lists a few local trades mostly derived from the Port Books. A better overview is supplied by Southward and Boalch, 'Marine resources', pp. 55, 59.

133 Oppenheim, 'Maritime history', pp. 475-6.

134 For the shipment of lead and lead ore from Aberdovey and Aberystwyth, see Rees, *Industry,* pp. 457-61; Lewis, *Lead mining*; Beynon, 'Lead mining industry'.

135 Clark, *Exe estuary, pp 93-4,* see also pp. 73-88 for a useful, if over-generous assessment of Exeter's hinterland. The problems of Land's End and the Scillies are outlined in Oppenheim, 'Maritime history', pp. 502-3.

Notes to Chapter 1: The Port Books of the Bristol Channel.

1 Clark, *Guide*, pp.50-4 and Hoon, *English Customs system*, Chapter 1, detail the many abuses afflicting Customs collection and administrative competence of the various Customs officers.

2 Metters, 'Kings Lynn'; Evans, 'Ipswich'; Hoskins,*Industry, trade and people*; Woodward, *Elizabethan Chester*; Williams, *East Anglian ports*, esp. Chapters 5 and 6 all derive much of their discussion of merchant activity and maritime affairs from the Port Books. For a more recent use of computerised Port Book data to examine trade and community, see Wanklyn, 'Shrewsbury boats', pp. 34-58. and 'Bridgnorth', pp. 37-64.

3 Willan argued that 'Bristol's coasting trade scarcely lends itself to statistical treatment, for it was made up of large cargoes of miscellaneous goods which resembled those shipped from London.' *Coasting Trade*, p.172.

4 See for example, Wakelin, 'Trade on the river Severn', pp. 30-1 quoting Williams, *Descriptive list*, p. v.

5 There have been a few excellent studies of overland trade and haulage in the pre-industrial age which owe very little or nothing to coastal trade. See, for example, Hey, *Packmen* and Gerhold, *Road transport* and his 'Packhorses and wheeled vehicles'.

6 Willan, *Coasting trade*, pp. 1-10

7 Andrews, 'Two problems', pp.119-121; Williams, 'London Port Books', pp. 13-26. Jarvis,'Lancaster', pp.117-58; Jarvis, 'History of ports', pp. 76-93; Jarvis, 'Ships and shipping', Jarvis, 'Appointment of ports'; Jarvis, 'Chester and Liverpool', pp.69-84.

8 There is a 'port history' for virtually every port or creek at which ships berthed. Naturally much of this literature is not aimed at a scholarly audience (see, for example, Farr, *Ships and harbours of Exmoor*; Lamplugh, *Ilfracombe*). Among the most detailed and scholarly which use Port Book evidence are Davis, *Hull*; Jackson, *Hull in the eighteenth century* together with his smaller *Trade and shipping of Hull*; Woodward *Chester*; Stephens, *Exeter*; Hoskins, *Industry, trade and people* and Minchinton, *Trade of Bristol.*

9 The best recent local overview with relevance to the Bristol Channel region is Grant, 'Port Books', pp.57-69.

10 See for example, Lewis, 'Welsh Port Books' and 'Cardigan'; Evans, 'Carmarthen'; Evans, 'Ipswich'; Stephens, 'Cloth exports', pp. 228-48; and his 'Port Books as a source', pp.206-13; 'Trade of Chester'; 'Trade of Plymouth'; Woodward, *Chester*; Williams, *East Anglian ports*; Hinton, *Boston*; Vanes, *Port of Bristol.* All use Port Book evidence far more extensively than later monographs.

11 The principal work remains Wakelin, 'Trade on the river Severn', although some of the conclusions contained in this thesis have been are amended in the light of further analysis: Hussey, Milne, Wakelin and Wanklyn, *Summary.*

12 Wakelin, 'Trade on the river Severn', p.31, and the preceding discussion, pp. 19-23. The point is also made by Willan, 'Trade of the Severn valley', p. 37. For an assessment of the extent and impact of the long distance Severn trades see, Wanklyn, 'Shrewsbury boats', pp. 35-58 and 'Bridgnorth', pp. 53-8, also Hussey, Milne, Wakelin and Wanklyn, *Summary.*

13 Andrews, 'Two problems', pp. 119-122.

14 Andrews' conclusions upon let pass trade recorded from Kentish ports, stress the more complete record of the coast books of the Commonwealth period: 'Two Problems', p.120.

15 Williams, 'A contribution to the commercial history of Glamorgan', pp. 330-60; Williams, 'Further contributions to the commercial history of Glamorgan'; Williams, 'Economic and social life', pp.21-40; Bettey, 'Livestock trade', pp. 123-8. Importantly, earlier Port Books under the administration of Cardiff and its member, Swansea and Neath, regularly contain information that was later omitted.

16 Wakelin, 'Trade on the river Severn', p. 32.

17 Chartres, *Internal trade*, p.13; Wakelin, 'Trade on the river Severn', pp. 32-3. Chartres develops these points in relation to overland trade: 'Road carrying', pp. 73-6. See also Turnbull, 'Provincial road carrying', pp. 17-39 and Gerhold, 'London carrying trade', esp. pp. 392-4

18 Willan, *Coasting Trade*, pp. 167-188.

19 In particular the papers of Hoare and Company (later Balch and Company) of Bridgwater, PRO C104/12; William Alloway junior, SRO DD/DN 463.

20 Crouch, *Complete view* and *Complete guide*; Gras, *Early English Customs system*; Hoon, *English Customs system*; Jarvis, 'Introduction' and 'Appointment of ports'. Both Carson, *Ancient and rightful Customs* and Hall, *Customs Revenue* provide brief overviews.

21 Willan, *Coasting Trade*, pp. 1-10.; Andrews, 'Two problems', pp.120-1; Williams, *East Anglian ports*, pp. 13-8; Wanklyn, 'Shrewsbury boats'; Wanklyn, 'Bridgnorth'; Wakelin, 'Trade on the River Severn', pp. 33-51. See also Hussey, Milne, Wakelin, and Wanklyn, *Summary*.

22 Wakelin, 'Trade on the river Severn', Chapter 1, especially section iv, p. 57. My italics in order to distinguish between purely coastal carriage and the river-based systems described by Wakelin.

23 The best resume of development remains Jarvis, `Appointment of Ports', especially pp. 457-63. See also Gras, *Early English Customs system*, 'Memorandum on the Port Books', pp.125-7; Clark, *English commercial statistics*, pp. 50-4. Hoon, *English Customs system*, Introduction.

24 Hoon, *English Customs system*, pp. 36-38.

25 Jarvis, `Appointment of ports', p.463.

26 The duties of patent officers are summarised by Crouch, *Complete guide*, pp. 1-6; Jarvis, 'Preface', pp. xii-xvii, and Hoon, pp. 5-25. The financial perquisites enjoyed by patent officers at the larger outports were great. The searcher of Bristol, for example, held extensive rights and dues payable by overseas and coastal ships: *SRO* DD/BR/gr 10, schedule of Tyndale Searcher of Bristol, 1670 and composition, 1694. Corruption at Bristol was notorious: see E134 13 William 3 Mich 52, John Romsey (Clerk of Bristol) and others vs John Dutton Colt (Collector of Customs, Daniel Ballard and others.

27 Jarvis, 'Appointment of ports', p. 462; Jarvis, 'History of ports', pp. 80-1; Exchequer Rules, 32 Car II, quoted in Crouch, *Complete Guide*, p. 38.

28 There is some confusion about the number of Head and member ports for which coastal Port Books were kept. Wakelin intimates that records were kept for 25 Customs ports `plus nearly a hundred creeks or lesser harbours': `Trade on the river Severn', p.34. Williams, `Descriptive List' counts 122 ports and creeks. Both enumerations, however, were subject to change over time, as new establishments were created and some ports effectively ceased trading: Andrews, 'Two problems', p.119.

29 For overseas trade, goods could only be shipped or unladen at designated `legal quays' within a port establishment. Hence, in Bristol the legal quay encompassed St. Augustine's Back; further quays at Welsh Back were reserved to the coastal trade, with overseas commerce being permitted only by

sufferance of the Custom House. Jarvis, 'Appointment of ports', p.462, 'Sources for the history of ports', p.81

30 Jarvis, 'Appointment of ports', p.461-2 gives perhaps the most concise summary. The division of head, member and creek is also outlined by Crouch, *Complete View*, p.247-9.

31 Crouch *Complete View*, pp. 247-9, repeated by Wakelin, 'Trade on the river Severn', pp. 34-5. Crouch's division of the coast includes many errors of omission and commission (the status of Bideford, for example) and should not be seen as a definitive list of port establishment.

32 With a few exceptions Williams, *Descriptive lists* details these Port Book administrations.

33 Crouch, *Complete View*, p.247. Pill, or Crockham Pill, was traditionally the berth of the Bristol pilots, registered by the Merchant Venturers of Bristol: Farr, 'Bristol Channel pilotage'. There is no evidence of any direct trade to or from Pill, although both Kingroad and Hungroad, deep- water anchorages in the mouth of the Bristol Avon are occasionally mentioned in the coastal Port Books. Although, these attributions do not refer to a physical node of trade (i.e. a port) both Kingroad and Hungroad were effectively part of Bristol port. See Williams, *Bristol port plans*, pp. 141-4, for a concise description of the port of Bristol.

34 Crouch emphasises that Uphill and the river Axe was subordinate to the Bristol administration, *Complete View*, p. 247. The Axe was 'navigable as far up as Axbridge ... for coal vessels and other small craft' at this time: Knight, *Sea-board of Mendip*, p. 263, 271. In a complete survey of the entire Gloucester database, 1575-1765, Uphill is mentioned only once (in 1581), although evidence exists for it transshipping overseas goods to Bristol in 1696 (PRO C104/12 Pt. 1, f. 5v) and receiving cargoes of livestock and agricultural goods from Wales throughout the seventeenth century: Bettey, 'Livestock trade'; Jones and Scourfield, 'Sully', pp. 135-6

35 See Wakelin, `Trade on the river Severn', pp. 35-6 for a discussion of the various ports. See also Hussey, Milne, Wakelin, and Wanklyn, *Summary*.

36 The first separate record for Newnham and Berkeley was in 1673. The ports were only consistently recorded as discrete sections in the Gloucester coastal Port Books from 1704.

37 Traditionally the pilots' harbour at the mouth of the Parrett.

38 The Customs port of Plymouth and Fowey also held jurisdiction over Helston, Penryn, Truro and Looe: Williams, *Descriptive lists*. By 1725, the growth of Falmouth was recognised by the provision of member port status: Crouch, *Complete View*, p. 249; Whetter, 'Rise of Falmouth', pp.1-32.

39 The port of Carmarthen contained within its own boundaries other sizeable landing places such as Laugharne and St. Clears in the Taf estuary.

40 Endowed with the status of creek: MGRO B/C CH2 pp. 83, 107, 164-5, 169, 173. Williams, *Descriptive List*. No separate record is apparent in the coastal Port Books under review, although Newport was a frequent destination of vessels clearing Bristol.

41 Aberthaw was recorded in separate sections in the Port Books of Swansea and Neath in the 1670's. See below.

42 Not consistently recorded as a separate section until 1701.

43 Not consistently recorded as a separate section until 1702.

44 The main Wye ports were Tintern (Abbey Tintern); Brockweir; Redbrook; Monmouth; Ross; and Hereford. After Chepstow, Brockweir was the most significant centre of shipping. Around a third of total voyages were undertaken in Brockweir boats in 1699 (see Chapters 2 and 3). Redbrook was an

important centre of Copper production and shipment: Jenkins, 'Copper works of Redbrook and Bristol', pp. 145-67; Day, 'The Costers', pp. 48-58; Day, *Bristol brass*, pp. 49-53. Hereford's trade remained minimal until the Wye was effectively improved in the first decade of the eighteenth century: Willan, *River navigation*, pp. 53-4; Hereford City Records, Pilley Coll., 091.42 ff. 10-12 (1706) quoted in Chartres, 'Marketing of agricultural produce', p. 171.

45 Armstrong and Bagwell, 'Coastal shipping', p.180. See also Jarvis, 'Appointment of ports', pp. 462-6 and Hoon, *English Customs system*, pp. 8-10 for a critique of the system. Jarvis, 'Head port of Chester', pp. 69-84 and Andrews, 'Two problems', p. 119 supply useful local examples.

46 Williams, *Descriptive list*, vol. I.

47 The increase in trade was noted even by 1699. For example new appointments of customs officials at Barnstaple, Appledore, Plymouth, Clovelly and Bideford '...all as recommended by Capt. Ward in his late survey of Bideford port because of the great increase of business in that port' were ordered by Treasury warrant. *CTB*, XV, p. 212. See also Stephens, 'West-country ports', Watkins, *Bideford*, Defoe, *Tour*, p. 246.

48 Williams, *Descriptive list*, Vol. III.

49 84 entries from a total of 2099 were recorded as being 'of' Clovelly. Some of these shipments may, of course, have been to or from Bideford and merely reveal that such ships may have been only berthed in Clovelly. There is no way of disaggregating such voyages satisfactorily. For a more detailed discussion of the 'of' port, see below and Chapter 4.

50 This is evidenced in extensive quay provisions and the possession of quay rights and duties. See SRO, 1843 A/PR 3, erection of a quay, 1601 and 2239 B add 5/m 1, (transcript) dispute over Northam quay, 1716.

51 For example, John Quick 'mariner of Northam' [NDRO 1843A/PF 76], Philip Anderton, 'sailor of Northam' [NDRO 4227m/T2], and John King, 'mariner of Northam', [NDRO B9/18/30 (b)] all appeared on boats recorded at both Barnstaple and, more frequently, Bideford.

52 See NDRO B1 1128 and B1 1129 for disputes over the status of Appledore.

53 No boats 'of Appledore' are to be found within the coastal records of Barnstaple between 1692 and 1703.

54 Andrews, 'Two problems', p. 121.

55 Wakelin, 'Trade on the river Severn', pp. 32, 35.

56 Jarvis, 'Sources for the history of ports', p. 81-2.

57 SRO, T/PH/gc 10, T/PH/gc 11: proposal of charges, maintenace of sea walls, Porlock; SRO DD/L 2; SRO DD/WY bx 10 E 3/1, 2; SRO DD/WY/bx 40 and 41: Deeds, accounts and papers regarding quay duties and harbour improvement, 1528-1765. See also SRO DD/L 1 54/42 unfoliated papers re weighing of wool at Minehead: legal deposition concerning wool ports, 1732.

58 Willan, *Coasting trade*, recognises the importance of Watchet as an importing centre as recorded in the coast Books of the south Wales, pp. 64, 173, but fails to tackle the comprehension of the port within the seemingly unitary records of Minehead, pp.168-71. See also Wedlake, *History of Watchet*, pp. 83-4; *VCH Somerset*, V, pp. 147-8, for the significance of Watchet as a trading port.

59 For example the Port Books of Swansea & Neath, Carmarthen and Milford. Such Books are not without certain methodological problems regarding the enumeration of voyages to specific destination ports: see below.

60 For the discussion of the interpretion of the 'home' port, see below, Chapters 2 and 4; Wakelin, 'Trade on the river Severn', pp. 46-9; Hussey, Milne, Wakelin and Wanklyn, *Summary*.

61 Boats 'of' Minehead were involved in only 51 voyages.

62 Boats 'of Watchet', often traded to and from centres unconnected with the 'home' port.

63 Watchet had imposed a series of ad valorem duties on both goods and vessels using the port and its facilities from at least the later sixteenth century. These customary payments were augmented by further duties to maintain the quay and harbour in 1665: SRO DD/WY/bx 40, *Harbour trust deed, priveleges of the manor and borough, 1665*. The harbour was badly damaged by storms in 1697 and 1705, requiring a private Act of Parliament to levy extensive new dues: SRO DD/WY/bx 41 articles between William Row, mason, and Sir William Wyndham. These failed to remedy the faults and by 1721 the head of the pier was in 'a tottering, ruinous and dilapidated condition': SRO DD/WY/bx 41 Wyndham vs. Stone, interrogatories and breviates.

64 The early period (to Lady Day 1709) is covered by a summary annual account. From Michaelmas 1719 to Michaelmas 1727 duties were leased to Richard Wheddon, a prominent Watchet merchant 'att the Yearly rent of One hundred pounds clear of all outgoings'. SRO DD/WY/bx 40 *Watchet port: Account Book of Quay Duties, 1708-65*.

65 Four overseas voyages were also recorded: single shipments to Youghall, and from Cork, Youghall and Oporto bound for Bridgwater. SRO DD/WY/bx 40: *Watchet port: Account Book of Quay Duties, 1708-65*.

66 Trade within the boundaries of a given port jurisdiction was not required to be recorded by coquet in the coastal Port Book, but could pass legitimately by transire. Crouch, *Complete guide*, p.11, manuscript footnote 2. Thus, shipments between Minehead, Porlock and Watchet because all where contained within the core administration of Minehead would go unrecorded. See also Wakelin, 'Trade on the river Severn', pp. 36-8.

67 Andrews, 'Two problems', p.120

68 This process may have happened much earlier. See Lewis, *Welsh Port Books*, Introduction.

69 *CTB*, XV, p. 130; 427. Andrews, 'Chepstow: a defunct seaport', pp. 97-107.

70 MGRO B/C CH 2, p. 130. No Port Books exist for south Wales after 1719, (Williams, *Descriptive List*, vol III. Williams, 'Port Books of Swansea and Neath', pp. 192-3), although they well have been dispatched to the Exchequer, MGRO B/C CH 2, p. 77.

71 Oystermouth maintained a few coasters engaged in the local and cross-Channel coal and culm trade, having 'a common port or passage into England wherein is builded a kay for that purpose'. Port Eynon was described in the 1690's as maintaining 'a common passage to England, a new kay was lately builded there by S^{r} Edward Mansell and the aid of the country of Gowyr', Lhwyd, *Parochalia*, III, pp. 141-3.

72 Dawson, *Commerce and customs*.

73 MGRO B/C CH2, pp. 83, 163; Jones and Scourfield, *Sully*, pp. 125-36; Rees, *Cardiff*, p. 124.

74 See, for example, the activities of John Bird, Cus oms Officer at Newport: MGRO CL MS 4.266, Letter Book of John Bird, f. 87-92..

75 Dawson, *Commerce and customs* implies that the trade of Newport and Caerleon was not recorded in the later seventeenth century.

76 MGRO, B/C CH 2, p. 130. In the 1673 coastal Port Book for Swansea and Neath, 13 voyages from Aberthaw, mostly to Minehead, are recorded in a separate section.

77 Wakelin, 'Trade on the river Severn', p.35. Johnson, 'Charcoal iron industry', 'Foley partnerships'.

78 Wakelin, 'Trade on the river Severn', pp. 37-8, 54

79 See Crouch, *Complete guide*, pp. 3-7; 11; Hoon, *English customs system*, pp. 5-25.

80 Crouch, *Complete guide*, pp. 2-38, *Complete view*, p. 247, Willan, *Coasting trade*, pp. 1-11; Hoon, *English customs system*, pp. 264-9.

81 Crouch, *Complete Guide*, Chapter 2; B.Y., *Modern practice of the Court of Exchequer*, pp. 431ff. This is confirmed by the letter books held in outports such as Cardiff, (MGRO B/C CH2) or Liverpool (Jarvis, *Customs Letter Books of Liverpool*) and various orders from the Board of Trade, most particularly SRO DD/SF 2769.

82 Crouch, *Complete guide*, pp.5-6.

83 Crouch, *Complete guide*, pp.4-8, 30-7. An abstract of excise shipments was supposed to be sent to the Exchequer at the end of every month, or exceptionally, and in the case of Bristol, every week. For the duties of coal meters, see Score, *Guide to the Customers and Collectors clerks*, p. 81 (347).

84 Crouch, *Complete Guide*, p.38.

85 Crouch, *Complete Guide*, p.38.

86 Some local Books appear to have survived and may be rough copies of Port Books sent up to London. See, for example, *GRO* D/D MG 1, Port of Swansea: Port Book, Aug.-Dec. 1685.

87 Willan, *Coasting trade*, pp. 1-10; Wakelin, 'Trade on the river Severn', pp. 40-2; Williams, *East Anglian ports*, pp. 13-8. However, the keeping and utility of Port Books was increasingly questioned in the eighteenth century: Hoon, *English customs system*, pp. 8-9 and n.5.

88 Crouch, *Complete guide*, p.15.

89 Goods were to be shipped within the realm, and, although the destination port was habitually stated and the voyage adhered to, multiple voyages and the tramping of cargo was not uncommon. Crouch, *Complete guide*, pp. 15-6. If wind blown abroad an affidavit was necessary and customs duty was payable, p. 14, 16.

90 The standard used by Willan, *Coasting trade* and Wakelin, 'Trade on the river Severn', has been adopted, although the *OED* version 'cocquet' or 'cocket' (as used by Crouch) might be deemed more accurate.

91 Crouch, *Complete guide*, p.16. Two hogsheads of tobacco measured around 800 lbs, see Chapter 3 for a discussion of tobacco conversions.

92 The full intricacies of the system and officers needing payment are listed in Crouch, *Complete guide*, pp. 11-39. Habitual payments to London officers are given in *Complete view*, p. 255.

93 Wakelin, 'Trade on the river Severn', pp.39-40, quoting Fosbrooke, *City of Gloucester*, p. 26, implies that 5s 8d. (the 1580 figure) remained the fee for issuing coquets at Gloucester. He is not clear whether this was for an overseas or coastal coquet. The inflation was a result of the dispute between

Bristol and Gloucester over the status of Head Port in 1580, see Vanes, 'Overseas trade of Bristol', pp. 34-5. Hoare and Company of Bridgwater paid between 2 and 5 s. per voyage for documentary authorisation in 1696 (C104/12 Pt 1, f. 5r). William Alloway also of Bridgwater normally paid between 2s. and 2s. 8d. for a letpass at Bridgwater between 1695 and 1699 (SRO DD/DN 463, pp. 30, 35, 61, 81). A Barnstaple factor responsible for loading culm at Milford in 1687 paid 7s. for a coquet *and* other port incidentals such as keyage, moorage and pilotage (NDRO B 69/37 Account Book of Benjamin Smale(?), f. 1-2v, 18 August 1687).

94 See PRO E190 1095/2; 1095/6. Compare Willan, *Coasting Trade*, p.5

95 This explanation is favoured by Wakelin, 'Trade on the river Severn', p.40.

96 Crouch, *Complete guide*, p. 36, 38.

97 Bristol, from 1660, and the ports of Cardiff and Swansea & Neath did not record inwards traffic. Exeter, by contrast, omitted traffic clearing the port in the first half of 1699. Williams, *Descriptive list*, vol. 1.

98 See Wakelin, 'Trade on the river Severn', pp.40-1.

99 Crouch, *Complete guide*, p.30. For coal duties see 9&10William III c.13; Nef, *Coal Industry*, i, pp.234-6; ii, 229-34; Evans, 'Coal trade', Score, *Guide to the Customers and Controllers clerks*, pp. 342-7.

100 Particularly in the case of salt shipments where overloading, either by accident or device, was subject to legal action: BAO 04434/3 Orders and Recognizances of Tolzey Court, 1693-1703, pp. 77-8; 83-7; 92; 94-5; 109-110; 119; 122-3; 130; 137-8; 162-4; 170-1; 176-7; 189-90; BAO 04449 (2) Quarter Sessions Docket Book, 1703-12; Chapter 5 below.

101 Crouch, *Complete guide*, p.25. If only part of the goods were to be discharged the coquet was to be taken to the other ports of discharge accompanied by due authorisation.

102 See Wakelin, 'Trade on the river Severn', p.40 for the system as it operated at Gloucester, which never specified the date of endorsement. At most other coastal ports the elision 'ret' or 'gr' was supplemented by the date when the coquet was thus endorsed. Liverpool gives dates of endorsement (granting) *and* return. PRO E190 1360/16, E190 1361/3.

103 Crouch, *Complete guide*, p.26.

104 For example, PRO E190/1286/4/6/02, where a coal shipment from Neath was 'windroven' to Youghall in Ireland.

105 Thus, John Neale the master of the Providence of Bridgwater bound from Liverpool to Bridgwater carrying a cargo of salt and fish, put in at Padstow made oath that '900 Bushells of the said salt ... perished in the sea'. PRO E190/1056/24/01/06.

106 Crouch, *Complete guide*, p.27. The Cardiff officers complained in 1737 that they were never 'put to the expense' of sending up Books to the Exchequer annually stating that 'three years Books from Xmas 1730 to Xmas 1733 [were] now ready filled' and awaiting dispatch. MGRO B/C CH2, p. 77.

107 Willan, *Coasting trade*, pp. 7-8, Hoon, *English Customs system*, pp. 265-8, Andrews, 'Two problems', p. 120, Wakelin, 'Trade on the river Severn', pp. 41-4 discuss the use of non-coquet documentation. In the Bristol Channel the terms were o ly specific to port administrations. For example, the port of Barnstaple habitually used letpasses throughout the 1690's, (PRO E190 966-973), although sufferances were noted alongside this practice with greater frequency from the 1700's (see for example PRO E190 978/10). Minehead noted transires and letpasses in roughly equal measure (PRO E190 1099/1, 1099/7), Ilfracombe (PRO E190 973/15, 973/10) and Bridgwater recorded letpasses only

(PRO E190 1098/5, 1098/9) whilst Liverpool exclusively used the warrant to authorise small scale and local trade (PRO E190 1360/16, 1361/3).

108 Crouch, *Complete guide*, pp. 16-17.

109 Wakelin, 'Trade of the river Severn', p.41 quoting Gras, *English Custom system*, p.145.

110 Crouch, *Complete guide*, pp.16-7. All types of linen '(unless of several species from Retailers' shops) sent in the same package as imported from beyond the seas, or in Trusses all of one sort'; wine and brandy 'exceeding one ton in quantity'; and tobacco over two hogsheads required coquets. The movement of corn was covered by 1 Anne c.26. Manuscript footnote in British Museum copy of Crouch, *Complete guide*, p. 11 (BM 522 n.8).

111 The most notable exceptions to this trend have been Andrews, 'Two problems', and his studies of local trade: Andrews, 'Customs Ports of Sussex'; 'Chichester and the grain trade'; 'Thanet seaports'; 'Faversham'. Williams, *East Anglian ports*, pp. 20-1 deals succinctly with transires and their traffic but does not say whether omission at certain ports affected trade. Such a failure to assess unrecorded traffic has severely compromised some trade statistics. This is particularly so in the case of fish (from the inshore fisheries) which was recorded very erratically. See Chapter 3 below. Willan, *Coasting trade*, pp.129-131 fails to make this point.

112 Ships in ballast, or those passing through habitually escaped record: Andrews 'Two problems', pp. 119-21.

113 Crouch, *Complete guide*, pp.17-8. This was presumably the case with sufferances and warrants.

114 The Gloucester series only explicitly denotes 'coquet' in the text from 1697, although *the implication* is that prior to 1697 only coquet trade was recorded: personal communication from Dr. Malcolm Wanklyn. The exception to this postulation is the Commonwealth coast book of 1656-7, which appears to be a fuller record and probably contains (undesignated) letpass and transire trade. Wakelin, 'Trade on the river Severn', pp. 93-6.

115 Wakelin, 'Trade on the river Severn', p. 41. There are a number of Gloucester-issued letpasses explicitly recorded before this date and letpasses accounted for around 7% of voyages clearing Gloucester in the 1630's: personal communication from Dr. Malcolm Wanklyn. See also Hussey, Milne, Wakelin, and Wanklyn, *Summary*.

116 At Minehead, only for the half-year from 26 June to 24 December 1699.

117 This Book recorded inward voyages only at a significantly higher proportion than any preceding or future coastal Port Book. It is likely, therefore, to be a more complete record of trade, perhaps recording significant levels of letpass commerce. Wakelin, 'Trade on the river Severn', pp. 54-5, 93-4; Hussey, Milne, Wakelin, and Wanklyn, *Summary*; Andrews, 'Two problems', p.120.

118 The Bridgwater Port Books recorded 6 voyages clearing for Gloucester under letpass in 1695; 3 in 1696; 6 in 1697; 6 in 1699; and 14 in 1701, comprising all the shipments up-Severn. This was not recorded at Gloucester.

119 The coastal Port Books for Chepstow not only record solely coquets, but also the entries contain only abbreviated versions of the cargoes shipped: PRO E190/1285/2, 1285/13.

120 Wakelin remains fairly ambiguous to the precise dating of decline, quoting decadal sample figures from 1722 and 1733 to show the decline of recorded trade. However, greater examination of the Gloucester series reveals 1728-9 to be a more reliable dating.

121 Wakelin, 'Trade on the river Severn', pp. 42-4, 51, 55-6.

122 *CTP*, 1729-30, 441. Steep Holm and Flat Holm, islands in the Bristol Channel *'belonging'* to the Customs ports of Bristol and Cardiff respectively.

123 The point is made by the Cardiff Customer, MGRO B/C CH2, pp. 173-4. This inevitably caused problems of excise and duty evasion with the above-Holms ports and indeed the islands themselves being seen as a non-coquet, duty free area. MGRO B/C CH 2, pp. 131-2, 167-8.

124 The effect was felt not only at Bristol and Gloucester, but also Chepstow and Cardiff. The Cardiff officers suggest obliquely that the change may have had a reciprocal effect on the recorded trade of 'below-Holms' ports, with masters entering false 'above-Holms' destinations to obviate coquet and bond payment. MGRO B/C CH 2,pp. 131-2. See Hussey, Milne, Wakelin and Wanklyn, *Summary* for details of goods not as vitally affected by the change in practice.

125 Willan, *Coasting trade*, pp. 5, 70, 177.

126 The Treasury warrant discussing the decline of the Cardiff Customs officials' fees caused by the prohibition of issuing coquets and bonds on ships 'clearing coastwise to Bristol and other ports up the Severn' indicates that the practice was already established in part: *CTP*, 1729-30, 441. This is partially recognised by Wakelin when discussing the appearance of 'sufferances' within the Gloucester record: 'Trade on the river Severn', p. 43. Alternatively, these may relate to the more complex forms of local Customs practice as described by Crouch that were translated into the more summarised Port Book record. Crouch, *Complete guide*, pp. 11-15.

127 In 1699, 4 from a total of 34 voyages entering Bridgwater from Bristol were letpasses. In the same year 2 out of 14 voyages to Milford from Bristol were letpasses, 1 from 5 at Tenby and 1 from 15 at Carmarthen were also letpasses from Bristol.

128 In relation to tobacco, for example, Minehead received 56,829 lbs from Bristol between midsummer 1699 and midsummer 1700, 9,830 lbs of which, or some 17%, came by letpass.

129 This has been attempted in a fairly piecemeal and unquantitative fashion by Williams, 'Further contribution', pp. 354-66.

130 The pilchard trade is alluded to by Whetter, 'Cornish trade', pp. 405-6. See also Scantlebury, 'Export trade in pilchards' for an earlier overview and Southward, Boalch and Maddock, 'Herring and pilchard fisheries', pp. 37-9, for a resume of research and an interesting climatic approach. The trade connections of Robert Corker, merchant of Falmouth and Penzance, indicate the shipping of pilchards both overseas and to London for subsequent re-export in 1704. *NDRO* B 69/38, pp. 1-2.

131 PRO E190/1096/2; 1096/10. With 5 barrels of white herrings.

132 Willan, *Coasting trade*, pp.76, 165, 179.

133 Whetter, 'Cornish trade', pp.407-8.

134 Hoon, *English Customs system*, p. 267.

135 In total 13.5 pieces of Frenchdowlas of varying descriptions, 2100.5 ells and 1 piece of Irish linen, one ream of copy paper and 6 pipes of Portugal wine were transported by local merchants. Exeter took four consignments, an the other centres one apiece.

136 Crouch, *Complete guide*, pp. 18-9; 38-9. 'Letpasse ' for merchants and others were frequently issued by town corporations to allow movement of goods and persons. See *NDRO*, 1064 Q SO 1, Sessions Book, Bideford Quarter Sessions, passim.

137 Readers are directed to Wakelin, 'Comprehensive computerisation' and 'Trade on the river

Severn', Chapter 2. A further discussion of the methodological framework to the computerised study of coastal Port Books can be found in Milne and Paul, 'Flexible model for Port Book studies', and Hussey, Milne, Wakelin and Wanklyn, *Summary*, Introduction.

138 For example, the work of Grant on earthenware shipments from Barnstaple and Bideford remains a model of analysis and investigation into the potential of Port Book evidence: Grant, *North Devon pottery.*

139 Wakelin, `Trade on the river Severn', pp. 59-63, 81; Milne and Paul, 'Flexible model for Port Book studies', pp. 112-5; Hussey, Milne, Wakelin and Wanklyn, *Summary.*

140 See Wakelin, 'Trade on the river Severn', pp. 64-77. In addition to the Gloucester database, datasets have been established for the ports of Bristol, Bridgwater, Minehead, Ilfracombe, Barnstaple, Padstow, St. Ives, Mounts' Bay, Milford, Carmarthen, Swansea and Neath, Cardiff, Chepstow and Liverpool. Further records for Looe, Fowey, Truro, Penryn and Exeter have also been computerised. The author acknowledges the financial support provided by the *Leverhulme Trust* which has enabled much of this research to take place.

141 The volunteers who transcribed the coastal Port Books for this research are listed in the acknowledgements. I would like to thank them severally and personally for their diligence, helpful suggestions and humour.

142 For the arguably worst example of codification and the nightmare this poses to later historians trying to recover data structures, see Wardley and Woollard, 'Retrieving the past', esp. pp. 96-100.

143 See Milne and Paul, 'Flexible model for Port Book studies', pp. 106-15 for the transfer of data from PRIME INFORMATION upon which the datasets were initially supported.

144 Grant, 'Port Books', p. 62 outlines the 'puzzling variety' of Port Book descriptions, exacerbated by the highly idiosyncratic phonetic spellings and dialect words used by the Devon officials alone.

145 The problem of dealing severally with multiple dates, wordy cargo descriptions and additional marginal numbers, for example, is discussed in Hussey, Milne, Wakelin and Wanklyn, *Summary.* Amendments to the Gloucester database to account for merchant residence and the burthen of trows, commonly recorded in the sixteenth century, has already been completed. Milne and Paul, 'Flexible model for Port Book studies', pp. 112-3.

146 Hinton, 'Boston', p. xxi, Woodward, 'Port Books', p. 208.

147 See SRO, DD/DN 463, pp. 2-3 and Chapters 4 and 5 below.

148 Willan, *Coasting trade*, pp. 217-9.

149 Williams, *East Anglian ports*, pp. 204-8.

150 See Wanklyn, 'Shrewsbury boats', pp. 51-2; 'Working paper'; Wakelin, 'Trade on the river Severn', pp. 46-8; also Hussey, Milne, Wakelin and Wanklyn, *Summary.*

151 In addition to the *Anne*, three other boats exhibited this change in home port designation. The *Five Sisters*, master Luke Thorn, completed ten voyages of which one was to Combe Martin, with a corresponding home port; the *Loves Increase*, master Richard Smyth, three voyages, one to Combe Martin; and the *William*, master Nicholas Smyth, six voyages, one to Combe Martin. PRO E190 1314/6; 1314/8.

152 There is a degree of interpretational difficulty surrounding the frequent use of `Combe' to designate `Ilfracombe' as opposed to Combe Martin, or even Woolacombe. In all cases `Combe' has been interpreted as Ilfracombe, as it appears that other Combe derivatives were specified in the full

form. The division between Combe and Ilfracombe has, however, been preserved in all the databases.

153 Willan, *Coasting trade*, pp. 6-7, although Willan does make the point that the 1786 legislation probably sealed informal practices that were in place sometime beforehand. See also, Williams, *East Anglian ports*, pp. 204-8. For the registration of shipping, see Davis, *English shipping industry*, p. 70, 79-80, Armstrong and Bagwell, 'Coastal shipping', p. 146; Jarvis, 'Ship registry', pp. 151-67 discusses the developments leading up to the Act of 1786.

154 Wakelin, 'Trade on the river Severn', p.45.

155 Some difficulty surrounds the interpretation of these dates. For example, the *Fruition* of Milford, bound for Milford with a cargo of rock and white salt cleared Liverpool on 5 August. The entry has as a marginal notification: 'rec~d Cer. 12 Feb.99 dat: 7 9ber 99', which may refer to the cyclical process by which certificates issued for the completion of one shipment were sent back to the original port of lading as testament of the completed transaction. PRO E190 1361/3 f. 4.

156 See for example Woodward, *Chester*, and Hinton, *Boston*. It was practical for such studies to use merely one series of Books for the simple reason that they recorded shipments clearing and entering a single port or navigation.

157 It failed to account for letpasses, transires or other non-coquet forms of customs documentation issued at other ports or, more conjecturally, at Gloucester itself. Although recognised by Wakelin, this factor undoubtedly undermines the comprehensiveness of inward voyages recorded. Wakelin, 'Trade on the river Severn', pp. 42-4; Wanklyn, 'Shrewsbury boats', pp. 34-6.

158 Willan, *Coasting trade*, pp. 167-80 also 157-64 for coastal imports. Minchinton was far more comprehensive in his coverage of goods traded, although this again suffered from a lack of supporting Port Book evidence: 'Bristol - metropolis', pp. 73-80. Much of Minchinton's work resurfaced in Lobel, 'Bristol', pp. 15-21, Walker, *Bristol region*, pp. 181-85, Sacks, 'Trade, society and politics', pp. 382-4. The picture is exacerbated by the almost total absence of coastal statistics on cargo redistribution and compilation from much recent research into Bristol's overseas trade. See for example, Morgan, 'Bristol and the Atlantic trades'.

159 Wakelin, for example, used decadal samples to highlight change and continuity: 'Trade on the river Severn', pp.77-81 outlines the sampling techniques underpinning his longitudinal study.

160 The strategy for demarcating the 'Bristol Channel region' is outlined in the Introduction.

161 Between 1660 and 1690 and 1702 to 1710 the Bristol record is particularly shabby. In addition, the Welsh Books tail off from c.1712 and end in 1719. Williams, *Descriptive list*, vols I, II, III, Williams, 'Port Books of Swansea and Neath', p. 194.

162 This affects Padstow, St. Ives, and Mounts Bay, although coastal Books for all Cornish ports for this period are missing. Williams, *Descriptive list*.

163 PRO T 64/140. My thanks are to Michael Price for drawing my attention to Culliford's investigations. See also Whetter, 'Economic history of Cornwall', p. 241, *Cornwall*, pp. 158-9, 176 for some of the abuses discovered in Cornish ports.

164 SRO DD/SF/2769, f.1, tentatively dated to late seventeenth century (Commissioner Culliford is mentioned). The document was addressed to Plymouth, Looe, Fowey, Penryn, Truro, Penzance, Padstow, Bideford and Barnstaple.

165 SRO DD/SF/2769, f.1r. Officials found to be corrupt, incompetent or malingering were quickly dismissed. For example, Jonathan Wharton the surveyor of Plymouth was dismissed in 1699 for 'great neglects and miscarriages' of his duty: *CTB*, XV p. 125. See also *CTP*, 1697-1701-2, LXXXVIII. 34, pp. 560-1 for measures taken over the proper qualification of Customs officers in 1702.

166 Bowden, *Wool Trade*, pp. 200-1. It is debatable whether this practice, motivated by the Protectionist concerns of domestic clothiers, had any material effect upon the supposed running of wool abroad. It was, however, important in the extension of the powers of the Customs in overseeing coastal movement. See Hussey, Milne, Wakelin, and Wanklyn, *Summary*.

167 *CTB*, IX, p.1432.

168 *CTB*, VII, p.1415. The order appears to have had little general effect, although many ports implemented the new instructions for the following year. For example at Bristol, two coastal Port Books were produced in 1685 (E190 1147/3; 1147/4), whilst at Gloucester, 1686 was divided accordingly, although with much omission and confusion (E190 1251/7; 1251/12). In 1689, however, Gloucester reverted back to an annual Book (1251/14). Carmarthen continued to produce annual Books until 1694.

169 At Minehead, for example, the Treasury Warrant presaged the greater recording of petty shipments that did not habitually require the Coquet and Bond system.

170 Hoskins has identified the period 1692-8 as witnessing recurrent bad harvests, 'Harvest fluctuation, 1620-1759', pp. 22-3, 30. See also Lamb, *Climate*, Chapter 12 esp. p. 219. The Great Storm of 1703 was perhaps the single most calamitous meteorological event causing severe disruption to regional commerce: BCL B11154, Southwell Papers, vol 3, f. 84.

171 The procedures undertaken to isolate and correct illegible and invalid data are outlined by Wakelin, 'Trade on the river Severn', pp. 76-7, 88-9.

172 PRO E190 801/31, originally and erroneously attached to the Exeter and Dartmouth series. The document is torn and partially obliterated at the bottom. However, over 80% is readable and for the sake of providing comparative data, it was decided to progress with full computerisation. In addition the records for 1700 have been computerised in full.

173 Notification of this practice has been made by flagging data in the *Cargo Additional* and *Miscellanea* fields. No attempt was made to alter or rectify decipherable data even if they appeared to conflict with more credible evidence. Similarly, the temptation to correct proven scribal error has been resisted. Even where comparative sources may confirm erroneous or suspect practice, the entry is transcribed as seen, with, if necessary, a flag to that effect inserted in the *miscellanea* field. For further examples, see Appendix 1.

174 It appears that this was not a prerequisite for customs officers and many ports drop recording from the early eighteenth century. In the case of Barnstaple this was much earlier, and as a result, the research has focussed on its large and independent creek, Bideford.

175 The Customs officers at both Barnstaple and Chepstow tended to abbreviate the longer cargoes by transcribing an 'etc' after the first four or so items.

176 At Milford only 44% of voyages (218 out of 495 decipherable shipments) were recorded as clearing from or bound for Bristol Channel ports in 1699. In the case of Mounts' Bay of the 17 entries recorded in 1697, only 6 were linked to the Bristol Channel trade.

177 PRO E190 1252/8.

178 PRO E190 1317/16 was not microfilmed by the Reprographics Department of the Public Record Office owing to its poor condition.

179 65 Books were computerised in their entirety and 45 computerised in part. Of the latter, the Bideford sample represents roughly 46% of the Barnstaple record, Tenby 28% of the Carmarthen Books, and Neath 45% of the Swansea and Neath record. A further 2 Books were computerised for

Liverpool.

180 The total sample contains 21,379 entries, each with 21 fields. An average of seven cargo items, modest for Bristol and Gloucester, but rather large for the coal ports totals 983,434 attributes. Of course, at some ports and for some fields such data are blank, especially for the *Cargo Additional* attribute. In others, Bridgwater for example, very full descriptions are given of volumetric measures, dates and means of overseas import, importing merchants and boats.

181 Wakelin, 'Trade on the river Severn', sampled 9,402 records, or 25% of the extended Gloucester series of 37,490 entries. Additions to the series have antedated the survey to 1575, but do not materially affect his findings. See, Hussey, Milne, Wakelin and Wanklyn, *Summary*.

182 The terms and methods which allow sophisticated and sensitive forms of criticism to be applied to this vast bank of machine-readable data have been outlined in Wakelin, 'Comprehensive computerisation', pp.111-2, 114-5; Wakelin, 'Trade on the river Severn', pp. 81-9; Milne and Paul, 'A flexible model for Port Book studies'; Hussey, Milne, Wakelin and Wanklyn, *Summary*.

183 See, for example, Lewis, *Welsh Port Books*, which reproduces the source verbatim, but fails to analyse the data in any systematic way. George, 'Pembrokeshire sea-trading', has used Port Book evidence to suggest regional growth and decline in a number of seaborne trades. However, her study approaches the subject more from the perspective of an historical geographer, and she is, like Willan and others, more concerned with stressing change over time. The studies of sixteenth century trade, for example, Woodward, *Chester* and Williams, *East Anglian ports*, remain perhaps the most complete analyses.

184 Fogel, 'The new economic history', p. 651.

185 The use of parentheses stresses Williams' principled distaste of applying statistical nomenclature to records manifestly unstatistical in compilation: *East Anglian ports*, pp. 47-9.

186 William Goldwin, *A Poetical Description of Bristol*, p.1 [BCL B27023].

Notes to Chapter 2: Voyages and connections in the Bristol Channel.

1 Williams, *East Anglian ports*, pp. 47-8.

2 Chartres, 'Road carrying', pp. 73-94; Turnbull, 'Provincial road carrying', pp. 17-39; Gerhold,, 'London carrying trade', pp. 392-410.

3 Recent research has stressed the importance of more local systems of overland transport. Gerhold's discussion of transport services and the issues surrounding transport choice, despite its concentration on London sources, stresses the regional base to development: 'Packhorses and wheeled vehicles', pp.1-26. The importance of localism and local issues in determining transport 'improvement' in the eighteenth century is also discussed by Freeman, 'Popular attitudes to turnpikes', pp. 33-47. See also, Albert, 'Popular opposition', pp. 1-17.

4 Wakelin, `Trade on the river Severn', pp. 83-4.

5 Bowden, *Wool trade*, p. 201. Wakelin's dating is erroneous: `Trade on the river Severn', p. 84.

6 In some Port Books, particularly those for Carmarthen and Barnstaple in 1695, domestic wool was still recorded as an appendix to the boat's cargo itinerary, instead of being transcribed as a separate entry. Even as late as 1698, Tenby was recording wool undifferentiated from the bulk of coquet goods: PRO E190 1314/11/03/27.

7 The Gloucester coastal Port Book PRO E190 1243/11 contains a number of examples of this type of multiple entry.

8 As both Bristol and Gloucester dealt exclusively in coquets, this was only recorded in the 'inwards' section of the coastal Books of the port of destination. For example, the *Elizabeth* of Gloucester discharged a cargo of rock salt, glass, wheat and malt, hemp and bells at Bridgwater on 16 July 1696. The vessel had left Gloucester under Henry Bailey and Richard Lomax with a coquet dated 4 July. In addition, the *Elizabeth* carried 636 tods of wool for William Alloway under a separate wool coquet and a letpass cargo of glass, sugar and logwood picked up en route at Bristol. PRO E190 1096/16/04/15-17.

9 For example, the *Success* of Bewdley entered Bridgwater on 17 June 1706 carrying salt and miscellaneous coquet goods from Gloucester under Charles Corker as merchant and master. In addition, a wool coquet specifying Nathaniel Galpine as merchant and a further letpass shipment of 5 tons of grindstones were attached: PRO E190 1100/09/12/18 - 13/01.

10 Only very infrequently do the Port Books record a vessel trading under two coquets. The *Dove* of Bridgwater, master and merchant William Turner, entered *Bridgwater on 2 September 1700* bearing two coquets: one from Neath with 16 chalders of coals and 1 cwt butter dated 29 August, the other from Swansea with 4 tons of iron and 4 cwt butter bearing the same date. The coquets were entered separately in the Bridgwater Port Book. PRO E190 1099/13/06/02-03.

11 At Liverpool, 56 'warrants' were recorded in 1699. These Customs devices appear to have been virtually identical to the letpasses, transires, and sufferances of the Bristol Channel ports, with the important distinction that goods carried under such means were expressly 'not for foreign parts' and their monetary or customable value was often listed.

12 See Chapter 5, section iv. for wool traded from Gloucester to Bridgwater in 1697.

13 The rank/size model has a venerable history in studies of the English town: Clark, *English county town*; Clark, *Impact of English towns*; Clark, Gaskin, and Wilson, *Population estimates of English small towns*; Clark, and Slack, *English towns in transition*; Corfield, *Impact of English towns*.

For recent applications of the rank-size model in determining the comparative importance of towns, see de Vries, *European Urbanization*, esp. Chapter 1; de Vries, 'Measurement, description, and analysis of historical urbanization', pp. 43-60; van der Woude, Hayami, and de Vries, 'The hierarchies, provisioning, and demographic patterns of cities', pp. 1-19; Bairoch, *Cities and economic development.*

14 Clark has described seventeenth century Gloucester as merely 'typical of the middle rank inland towns which formed the backbone of urban society in England for most of the early modern era': 'Civic leaders of Gloucester', p. 313.

15 This basic point was forcibly made by Wrigley: 'A simple model'. Recent work by Wrigley has embellished this: 'Metropolitan cities and their hinterlands', pp. 12-21. See also Chartres' work on the links between town and countryside: 'City and towns', pp. 138-55. Minchinton's 'Bristol - metropolis' concerns itself rather more obliquely with this issue. For a recent and challenging overview of the cultural hinterland of Bristol see Estabrook, 'Urbane and rustic Bristol'

16 See Chapter 5. The concentration of river and road links at the head of the Parrett was a noted feature as early as the thirteenth century: Langdon, 'Inland water transport', pp. 3-5 and Figure 1. Although Langdon disputes the conclusions of Edwards and Hindle concerning the general significance of water borne traffic in this period, he does point out that the Parrett was 'obviously of importance to [its] particular sub-region'. See also Edwards and Hindle, `Transportation system of medieval England and Wales', pp. 123-134 and 'Inland water transportation', pp. 12-4.

17 Such evidence is based on the special pleading of those opposed to the improvement of the Avon between Bristol and Bath first mooted in 1699 but only completed in 1725: Latimer, *Annals of Bristol in the eighteenth century*, pp. 94-5. The Southwell Papers indicate that the stated opposition to such proposals was based on the undercutting of local goods and attendant transportation services by cheap commodities which Bristol could procure from the region. This also formed the basis of the proposition. (BCL B11154, f. 49r, 70r).

18 Hechter, *Internal colonialism* advances the classic centre-periphery arguments with regard to the development of modern Wales. These issues are debated with regard to the 'peripheralisation' of the south west of England in Payton, *Cornwall*, pp. 13-20 and more generally in Havinden, Queniart, and Stanyer, *Centre and Periphery.*

19 See Chapter 3. The discussion of urban development in Wales is covered by Carter, 'Welsh towns', pp. 47-62 and Owen, 'Population of Wales', pp. 99-113.

20 George, 'Pembrokeshire sea-trading', pp. 1-30; Edwards, 'Coal industry', pp. 43-5.

21 See Table 2.4. In the coastal Port Books surveyed in the sample year, Swansea received 14 shipments from Minehead; 12 from Bristol; 10 from Bideford; 6 from Barnstaple; 4 from Bridgwater; 1 from Ilfracombe; 1 from Milford; 1 from Carmarthen; 1 from Chepstow; and 1 from Liverpool. 6 voyages cleared from Bridgwater to Neath; 5 from Bristol; 5 from Bideford; 5 from Minehead; 1 from Padstow; 1 from St. Ives; 1 from Barnstaple; and 1 from Tenby. Of the 12 additional shipments to the Customs port, 3 were bound for Newton, 2 for Burry, 2 for Oxwich, 2 for Oystermouth, 2 for Port Eynon, 1 for South Burry.

22 See Tables 2.5 and 2.6. 38 voyages are recorded entering from Cardiff or its creeks in the Port Books of Gloucester, Minehead, Carmarthen, Chepstow and Liverpool in c.1699. The Cardiff Port Books reveals that a further 31 shipments were bound for Bristol in 1700.

23 In addition, it must be remembered that intended voyages only are enumerated: it was a requirement that coastal cargoes discharged at domestic p rts and it was not unknown for ships to unload goods at destinations somewhat different to that stated in the Port Books and their Customs documentation. At Carmarthen, for example, coquets intended for other ports, usually within the Customs administration of Milford, were recorded, endorsed and discharged, often with a lighter load. See PRO E190 1316/14/04/06. Similarly, vessels were often blown off course or merely sought a

better market at other ports. Thus, the *John* of Upton was recorded clearing Gloucester with a cargo of flax seed, barley, malt, and cider on 15 March 1701 for Minehead. The vessel, however,discharged its goods at Tenby two months later, returning to Gloucester with culm.

24 The figures are listed by Minchinton, 'Trade of Bristol', Appendix A, p. 177. Latimer postulated that following the grant of a 90 year lease of port dues to the Merchant Venturers by Bristol Corporation in 1601, anchorage dues 'previously an occasional tax imposed only on foreigners ... were now laid on citizens for the first time'. The lease was confirmed in 1661. Latimer, *Annals of Bristol in the seventeenth century*, pp. 16-7, 305.

25 Bristol had notoriously high incidental port charges: BAO 05056, f 5r-10r, dues payable to the Bristol Haven Master, Ballast Master, and Quay Warden by all vessels using the port. Because of its physical site, navigating the Bristol Avon was also hazardous and necessitated the employment of experienced pilots: BAO 04437 (3) Quarter Sessions Minute Book, 1681-1705, f. 169r-v; BAO 05056, Orders and Recognisances of Tolzey Court, f. 10v-11v; BAO 11109(11) Account of James Charles, 1733; BAO 36074(58) Loss of cargo from ship being piloted in Kingroad. See also, Williams, 'Bristol port plans', pp. 140-4; Farr, 'Bristol Channel pilotage'; McGrath, 'Bristol Channel pilots'; Stuckey, *Sailing pilots*.

26 Wakelin implies that the number of voyages recorded passing upstream through Gloucester 'can be doubled ... in the light of the evidence from the [1656] Coast Book' and that the number of downstream voyages should 'be increased by ... half', with a further 50 voyages added to account for trade between the river and the estuarine ports that went unrecorded in the Gloucester coastal Port Books: 'Trade on the river Severn', pp. 95-6.

27 See Chapter 1 and above.

28 Barrett, *History and antiquities of Bristol*, pp. 189-91. See Chapter 4 for a full discussion of these figures.

29 If Wakelin's premise is correct, that Gloucester's inwards trade should be doubled and outwards trade increased by half, another 603 voyages may be added to the total for Bristol.

30 See Fisher, 'London food market', p. 51, 56; Wrigley, 'A simple model', p. 61, 65-6.

31 From north-east to north-west, these centres comprised: Newcastle upon Tyne; Scarborough; Hull; Boston; Kings Lynn; Wells; Yarmouth; Southwold; Dunwich; Woodbridge; Ipswich; Colchester; Maldon; London; Whitstable; Margate; Rye; Hastings; Newhaven; Brighton; Chichester; Portsmouth; Cowes; Newport (Isle of Wight); Burlsedon; Southampton; Lymington; Keyhaven; Poole; Weymouth; Lyme Regis; Topsham; Exeter; Teignmouth; Dartmouth; Plymouth; Looe; Fowey; Truro; Penryn; Falmouth; Helford; Gweek; Helston; Scilly; Fishguard; Cardigan; Aberystwyth; Aberdovey; Barmouth; Pwllheli; Caernarvon; Holyhead; Beaumaris; Conway; Mostyn; Flint; Chester; Hoylake; Frodsham; Runcorn; Liverpool; Ribble; Preston; Poolton; Ryland; Lancaster; Grange-over-Sands; Pielfowdrey; and Whitehaven. In addition, Jersey and Guernsey were occasional destinations for coal vessels clearing Swansea and Neath and a few overseas centres, mostly the Irish ports of Dublin, Waterford, Wexford; Youghall; Cork and Drogheda were sometimes erroneously listed in the coastal Books. Boats from these ports occasionally appeared undertaking voyages between domestic ports.

32 This form of Customs notation was mainly confined to trows tramping coastwise from Gloucester, and usually involved the ports of South Wales, Somerset and north Devon.

33 Due to the proximity of Barnstaple, Bideford and Northam some confusion surrounded the precise location where vessels bound for the Taw- Torridge estuary would discharge. The Port Books of Milford, in particular, tended to record Barnstaple solely as the destination port, whilst Bideford and Barnstaple varied as the stated destination (especially when Northam boats were involved) in the Swansea and Neath record. Evidence from the north Devon Ports suggests that stated destinations did not always correspond to the port of entry and the Port Book record.

34 A full overview of the numbers of voyages entering and clearing Gloucester and the Severn ports is presented in Wakelin, 'Trade on the river Severn', pp. 99-107.

35 See Chapter 3 for a more detailed breakdown of the commodity trades. The home ports of boats undertaking trade through Gloucester is discussed at length by Wakelin 'Trade on the river Severn', pp. 113-8. See Chapter 5, section ii., for the organisation of the salt trade at Bridgwater. Wakelin, 'Trade on the river Severn', pp. 170-210 provides an overview of the trade in Droitwich salt clearing Gloucester coastally.

36 230 voyages were destined for Gloucester and the Severn and Stratford Avon ports with a single voyage bound for Newnham. The Newnham entry is not picked up in the Gloucester series, which did not regularly record the trade of its estuarine creeks until 1704. Wakelin, 'Trade on the river Severn', pp. 99-107, deals with the trade of the Severn home ports, although omits this important detail. See also Hussey, Milne, Wakelin, and Wanklyn, *Summary*.

37 14 shipments cleared for Cardiff, 9 for Caerleon, 4 for Newport, and 2 for Aberthaw. See Chapter 3 for cargoes: The trade to and from Cardiff and its creeks is covered in Willan, *Coasting trade*, pp.178-9 and Williams, 'Economic and social history of Glamorgan', pp. 359-60.

38 Return voyages to Bridgwater accounted for 28 shipments clearing Bristol, whilst 12 voayges were bound for Watchet and a further 10 for Minehead.

39 See Chapter 3. Minchinton, 'Bristol- metropolis', pp. 78-80; Willan, *Coasting trade*, pp. 171-8.

40 14 voyages were bound for Liverpool, one for Chester. Other extra-regional voyages comprised 3 shipments to London, one to Dartmouth, and one to Newcastle.

41 Nef makes this point concerning the comparative cheapness of coal available to Somerset and north Devon ports: *Coal industry*, pp. 88-90.

42 In addition, the following voyages cleared Milford for ports beyond the region in 1699: 24 to Liverpool; 12 to London; 10 to Aberdovey; 7 to Pwhelli; 6 to Yarmouth; 5 to Weymouth; 4 to Barmouth; 4 to Chester; 4 to Fowey; 3 to Caernarvon; 3 to Looe; 3 to Whitehaven; 2 to Beaumaris; 2 to Falmouth; 2 to Poole; and 1 to Cardigan; Dunwich; Fishguard; Lancaster; Portsmouth; Truro and Wells.

43 In 1701, Swansea dispatched 75 voyages to Plymouth; 33 to Falmouth; 32 to Exeter or Topsham; 18 to Dartmouth; 14 to Truro; 13 to Looe; 8 to Fowey; and 4 to Teignmouth.

44 11 voyages cleared Neath for Truro in 1701 with a further 10 clearing for Exeter/Topsham; 8 for Fowey; 5 for Gweek; 4 for Falmouth; 4 for Looe; 3 for Plymouth; 2 for Guernsey; and 1 voyage for Cowes; London; Penryn and Southampton. Two further voyages were recorded as bound for Cork and Dublin.

45 29 voyages cleared Carmarthen in 1699 of which 9 were bound for Bristol and 15 for Liverpool.

46 Bristol, Swansea, Neath, South Burry, Llanelli and Cardiff have been omitted from the analysis because of the absence of inwards data at these ports.

47 Willan, *Coasting trade*, p. 111 emphasises this facet with regard to the east coast trade of London. The point is not elaborated in the much briefer sections dealing with the Bristol Channel, pp. 171-80.

48 The highest navigable port on the river Parrett, and 3 miles from Taunton.

49 PRO E134 23&24 Chas 2 Hil 28, f. 5v. However, another deponent warned that 'some tymes in a winter season of ill weather itt hath beene six or seaven weeks tyme' before voyages could be completed. In a further deposition, Thomas Games, formerly a purser to Bridgwater colliers, argued that voyages could be completed in 6 days 'in seasonable weather', 'very frequently soe to have beene done' in 8 days and a fortnight 'att some seasons of the yeare': PRO E134 24 Chas 2 East 24, f. 2v.

50 For example, on 30 December 1696, Hoare and Company's regular collier, the *William and Richard* of Bridgwater, departed Bridgwater for Swansea with beef, pork, turnips and carrots, peas, bread and beer worth £2 18s 8d. It discharged its coal cargo at Bridgwater 15 days later: PRO C104/12 Pt 2, f. 233r, 238v. Such provisions were the only items carried on all the Company's coal vessels. None were listed in the Port Books as dutiable goods.

51 Willan, *Coasting trade*, Chapter VIII, esp. pp. 113-8, 143-5. Nef, *Coal industry*, pp. 79-83. The economics of the east-coast trade are discussed more thoroughly by Dietz, 'North-east coal trade', pp.280-94 and with regard to shipping by Ville, 'Total factor productivity', pp. 355- 70.

52 See Chapter 5.

53 The Liverpool records reveal Swansea, Neath and the Cardiff ports to be minor players in this trade. One shipment of salt was dispatched from Liverpool to Swansea and one to Cardiff in 1699. No voyages entered Liverpool from the ports during the same period.

54 The *Exchange*, *Fly*, and *Two Sisters* all of Bridgwater, were either owned or part-owned by Hoare and Company or its partners. The *Fly*, for example, loaded malt under its master Charles Hyman at Bridgwater and cinders from Chepstow in May and June 1699: PRO C104/12 Pt 1, f. 177v Watkins to Himan, 20 June 1699.

55 The extra coastal import was a result of the *John* entering on 29 December 1696. Three of the inwards shipments were merchanted by Edward Crofts, a principal Cornish tin and general merchant. The wider Bristol sample confirms the regularity of trade and the continued involvement of Crofts. For a discussion of the activities of Crofts, see Chapter 4.

56 For example, the Carmarthen coastal Port Books for 1699 record the entry of the *Exchange* of Swansea under a coquet dated 9 August 1699 from Bristol to Swansea. See also Carter, 'Growth and decline of Welsh towns'; Williams, 'Carmarthenshire's maritime trade' for discussions of Carmarthen's primacy amongst south Wales towns.

57 Willan, *Coasting trade*, pp. 53-4, 172-3.

58 For such variables see Jenkins, `Times and seasons'; Hoskins, 'Harvest fluctuations'; Wakelin, `Trade on the river Severn', pp. 6-8; Wanklyn, `Shrewsbury boats'.

59 BAO 04437(3) Quarter Sessions Minute Book, 1681-1705, f.216v. F. 212r-213v gives the response to the embargo of 1692.

60 See, Wilson, *England's apprenticeship*, pp.280-85 and McLachlan, *Trade and Peace with old Spain*, pp. 30-45, and Graph 1.

61 John, 'War and the English economy', pp. 329-31. John quotes Jenkins, 'Copper smelting' for an indication of the rise of domestic industry. See also Jenkins, 'Redbrook and Bristol', pp. 145-52, Day, 'The Costers', pp. 47-58 and Day, *Bristol Brass*, pp. 29-35, 48-53 for the growth in regional centres of production.

62 Latimer, *Annals of Bristol in the eighteenth century*, pp.7, 101. The Bristol distillers' petition against French brandy imports in 1713 argued that domestically produced apple brandy was 'a good wholesome fine brandy which answered every needful purpose, and, if only kept long enough, was

hardly distinguishable from grape spirit'. The Bristol distillers were supported by the Common Council and Grand Jury: BRO 04264(8) Common Council proceedings, f.165, Presentment of Grand Jury 'for repealeing an Act for Distillinge Spirits upon malt'.

63 Although shortage of goods was periodically acute (see BCL B11154 Southwell Papers, vol 3, f.5; 35-8.), war, the stoppage of convoys or even the threat of conflict could enhance a merchant's market opportunities. See, for example, the activities of Graffin Prankard in Minchinton, *Trade of Bristol*, p.152, and Bettey, 'Prankard'.

64 Fisher argues that the firming up of the Anglo-Portuguese accord in the early eighteenth century bolstered trade: *Portugal trade*, pp. 35-6, 38-9.

65 For instance, whilst returning from North Shields via London to Bridgwater in 1696, the *Fortune* of Bridgwater was stripped of all its crew bar the commander, Valentine Francis, a carpenter and a boy. On 26 December, Francis, after employing additional crew, complained to Hoare and Company that 'except you can gett me a Protection for 10 men, the Press Pinks & ketches now will be in every hole along shore, so that I shall not keep a man'. Three days later Francis reported that '5 of my people is taken on board a press Pink, that presses for the Victory'. PRO C104/12 Part 1 fol 65r, 66r, 77v.

66 BAO 04437(3) Quarter Sessions Minute Book, 1681-1705, unfoliated, dated 04/02/1703.

67 For a concise account of French privateering and especially the actions of St. Malo ships see Crowhurst, *Defence of British trade*, pp. 15-31.

68 BCL 11154 Petition of Merchant Venturers, 1691 f. 35-7; petition of Merfchnat Venturers 1692, f. 41. Oppenheim, *Maritime history of Devon*, p. 93.

69 PRO C108/22 part 2, f. 5 r-v. Cockrem may have intended to deliver salt to the partners at Bridgwater, but seems to have settled for the safety of the convoy to Milford. He loaded coals and culm at Tenby for Ireland on 20 August (ibid, f. 28r), although the corresponding Carmarthen Port Book for 1696 does not record a salt shipment inwards (PRO E190 1313/17). The relevant Milford Book is not extant.

70 On 19 September 1695 Alloway received £40 from Wheddon 'towards his pt of the ransom of the shipp Sattisfaction lately taken by a French privateere': SRO DD/DN 463, p. 15.

71 Willan, *Coasting trade*, pp. 25-30 details many of the depredations faced by coasters in times of warfare, although his discussion is heavily slanted towards the east coast coal trade. See also Nef, *Coal industry*, II, p. 301-3; Hatcher, *Coal industry*, pp. 478-81 discuss the effects of war upon prices and unit costs of coal.

72 20 voyages cleared for London, 10 for Topsham, 3 for Falmouth, 2 for Plymouth and 1 for Poole. In contrast, 9 voyages (8 to Liverpool, 1 to Poolton) were dispatched beyond Milford.

73 On 10 November 1703 the *Abundance* of London, master Thomas Badam, merchant Benjamin Airs, carrying a large cargo of Stourbridge clay and callamy cut her anchor 'in Kingroad [in] the last violant storm & [was] cast away'. A further vessel clearing from Bristol, the *Primrose* of St. Ives, was also lost to the storm, being cast away in Milford harbour. For the effects of the Great Storm upon the port and town of Bristol see Latimer, *Annals of Bristol in the eighteenth century*, p. 57. The experience of Bristol, however, was minor compared to the east coast: Defoe, *Great Storm*.

74 The principal vessel used in voyages to Aberdovey (or Dovey) was the *Mine Adventure* owned by Humphrey Mackworth. Coal was landed at Aberdovey and lead ore returned to Mackworth's smelter at Melincryddan: Rees, *Industry before the Industrial Revolution*, pp. 526-48 details the growth in the lead, litharge and silver concerns supervised by Mackworth, p. 532, n.147 illustrates the link with the coastal trade. Coastal shipments are covered by Beynon, 'Lead mining industry' and Burt, 'Lead

production', pp. 249-68. The industry in Cardigan is more fully explored by Lewis, *Lead mining in Wales* and 'Lead-mining in Cardiganshire', pp.177-90.

75 Plymouth, London and Topsham/Exeter accounted for 3 out of 4 shipments clearing Tenby in 1695, 7 (from 8) in 1696, 2 (from 4) in 1697, 10 (from 16) in 1698, 7 (from 9) in 1699, 12 (from 19) in 1700, 18 (from 22) in 1701, and 7 (from 11) in 1701.

76 All of Bridgwater's coastal imports from extra-regional centres were from Liverpool (30 voyages) or Chester (1 voyage). Liverpool accounted for 25 and Chester for 2 of the 29 shipments received by Bideford and all 12 shipments discharging at Padstow in 1696 were from Liverpool.

77 This is discussed at length in Chapter 5. See also Hughes, *Administration and finance*, pp. 225-40, Barker, 'Lancashire coal, Cheshire salt' and Chaloner, 'Salt in Cheshire'.

78 At Bideford, Liverpool and Chester represented 82% of trade with extra-regional centres in 1695 (7 voyages), 83% in 1696 (35 voyages), 89% in 1698 (18 voyages), but only 44% in 1699 (39 voyages), 48% in 1700 (29 voyages), and 78% in 1702 (18 voyages).

79 For a full discussion of this Customs procedure, see Chapter 1 and Crouch, *Complete guide*, p. 18, 38-9.

80 Between 1722 and 1731, Bideford imported 8,450,427 lbs of tobacco and Barnstaple 5,045,377 lbs. Only 18% (1,486,303 lbs) and 1% (56,878 lbs) were retained by each respective port. In comparison, Bristol imported 41,661,256 lbs during the same period of which over three-fifths was retained (25,262,964 lbs). In total this represented 16% of the total quantity of tobacco imported to England and 29% of tobacco retained. Data from PRO T 1/278 f.30 reproduced in Hoskins, *Industry, trade and people*, pp. 160; 162 and Minchinton, 'Trade of Bristol', p. 15.

81 Smith may be identified with the eponymous 'merchant of Bideford', and Treasurer of the Bideford Bridge Trust in 1691 (NDRO BBT B6/7 f. 3r). George Buck was also an important overseas merchant, rising to alderman of the town in 1709 (NDRO 2379/A/Z/4). See also Watkins, *Bideford*, pp. 62-5.

82 Strange and Wadland were mentioned as merchants of Taw-Torridge boats. Strange was described as the 'Capt. of a new ship', possibly the *Bideford Galley* bound for Newfoundland in 1705 (NDRO B69/38 p. 176) and as alderman of Bideford in 1709 (NDRO 2379/A/Z 4). A John Wadland, merchant of Bideford was a feoffee of the old Bideford Bridge Trust in 1684 (NDRO BBT A1/a/8).

83 2,225 lbs were sent to Exeter in January and March of the year.

84 Hoon, *English Customs system*, pp. 267-8. The coastal trade in tobacco from Bristol is discussed more fully in Chapter 3.

85 Again Smith was the major merchant accounting for 10,900 lbs of tobacco sent to Exeter. In addition a further 1,576 lbs was dispatched under John Daure and 4,000 lbs with no merchant specified to Exeter. A single entry records 3,000 lbs being sent to Clovelly although no details are supplied concerning the merchant implicated in the transaction.

86 See above: data from PRO T 1/278 f.30 reproduced in Hoskins, *Industry, trade and people*, pp. 160; 162.

87 As coastal Port Books covered the half-years from Christmas to Midsummer and Midsummer to Christmas, there was a tendency for the record of trade to be slightly more erratic at the end of a given Port Book. As a result, all figures referring to December comprise voyages made between 26 and 31 of December in the previous year.

88 Lamb, *Climate*, p. 223. A severe period of frost began on 27 December 1694 and by 13

January, 'the Thames was frozen over, and the winter, which was characterised by severe cold and snow, did not end until April 14th': Stretton, *Agricultural records*, p. 61.

89 Minchinton, 'Bristol - metropolis', p. 80-1.

90 See, for example, PRO C104/12 Pt 1, f. 117v Galpine to Bayly 4 April 1698; f. 154v Galpine to Jones, 14 January 1699; f. 154v Galpine to Padmore 14 January 1699; f. 156r Galpine to Hackett, 18 January 1699; f.156v Galpine to Were 20 January 1699.

91 For fair-related business, including details of coasters paying dues at Bristol quay and back earlier in the seventeenth century, see BRO 04410 Whitson Court Book, 1629-53; 04411 Piepowdre Court Book, 1656; 04412 Piepowdre Court Book.

92 PRO E134 23&24 Chas 2 Hil 18, f. 5v. For the delays to coasting from Liverpool in winter, see Chapter 5.

93 Matthews, *Records of Cardiff*, II, 447 quoting Thomas Morgan's Commonplace Book: 'A large proportion of the commodities used in the household were obtained at Bristol & brought thence to Cardiff quay in Captain Priest's market boat'. See also ibid, III, 447, IV, 227, 306, 315.

94 This also accounts for years of virtual stoppage in January, such as in 1695, caused by inclement weather: Hussey, Milne, Wakelin, and Wanklyn, *Summary*, Chapter 3, especially p. 21, Figures 3.1-3.3.

95 Hatcher, *Coal industry*. pp. 476-8. See also Nef, *Coal industry*, I, pp. 292-4.

96 See Willan, *Coasting trade*, pp. 35-42, 55-69. Nef's outline of seasale markets is a rather descriptive overview: *Coal industry*, pp. 78-100. Evans concentrates more upon the structural underpinnings to coal production and taxation and enumerating the coal trade. His figures for the period under study are, however, erratic: 'Welsh coal trade' pp. 59-63, 69-75, Appendix A. Symons' study of Llanelli, though useful, is less concerned with trade: *Llanelli*, Appendix G, pp. 333-8. A gneral overview is provided by (amongst others) Lewis, *Industry before the Industrial Revolution*, pp. 70-106.

97 The Shropshire coalfield has been excluded from the analysis as much coal traded via the Severn remained within the Severn Valley hinterland. See Wakelin, 'Trade on the river Severn', pp. 135-7, Wanklyn, 'Bridgnorth', pp. 53-4. Cargoes filtering through to Bristol were thus not representative of the trade. Similarly, the output of the Bristol coalfield has been omitted as it is unclear whether coal leaving Bristol was transshipped from south Wales, although this was unlikely.

98 Hatcher, *Coal industry*, pp.346-9 quoting Nef, *Coal industry*, I, pp. 136-7.

99 For the development of the south Wales coalfield see Hatcher, *Coal industry*, pp. 135-41; Nef, *Coal industry*, I, pp. 52-6; John, *South Wales*; Symons, *Llanelli*, pp. 30-6; Edwards, 'Coal industry of Pembrokeshire'.

100 Willan, *Coasting trade*, pp. 21-33. Hatcher, *Coal industry*, pp. 476-9. In January and February 1697, for example, Hoare and Company's factory at Ham Mills was supplying the 'town trade', presumably coal for domestic and industrial use in Taunton, as well as preparing to lay up 'a great stock' of the preferable Swansea coals, inferior Abbey [Neath] coals and hard to acquire Pembrokeshire culm for the wider carrying trade; PRO C104/12 Pt 1, f. 76r; 81r; 84r; 93r.

101 Hatcher, *Coal industry*, p. 347.

102 Edwards, 'Coal industry in Pembrokeshire', pp. 43-4, 52-3.

Notes to Chapter 3: The regional trade in goods.

1 See for example, Williams, 'Economic and social history of Glamorgan', pp. 359-60; John, *Industrial revolution*, p.39; Willan, *Coasting Trade*, pp.167-80; Minchinton, 'Bristol - Metropolis'.

2 Willan, *Coasting trade*, especially the thematic Chapters V, VI, and VII. Nef, *Coal Industry*; Gras, *English corn market* remain comprehensive and largely unchallenged overviews of these most basic of trades. See also Hatcher, *Coal Industry*, and Chartres 'Marketing of agricultural produce', for more recent revisions.

3 Chartres, *Internal trade*, pp. 13-9, 31-5, 43-4. The importance of the low cost/high bulk cargo is reaffirmed by Armstrong and Bagwell, 'Coastal shipping', p.180.

4 See Weatherill, *Consumer behaviour*, Chapters 2 and 4 and especially pp. 84-90; Shammas, *Pre-industrial consumer*, esp. pp. 76-86. See also Lemire *Fashion's favourite* and her article 'Consumption' which deal respectively with cotton goods and secondhand clothes, and the trade in these items. An excellent collection of articles on the nature of 'consumer goods' is provided by Brewer and Styles, *Consumption and the world of goods.*

5 Wakelin, 'Trade on the river Severn', pp.123-69; Wanklyn, 'Shrewsbury boats', pp. 44-53; and Wanklyn, 'Bridgnorth', pp. 37-41. See also Hussey, Milne, Wakelin and Wanklyn, 'Summary', Introduction and Chapter 8.

6 See Trinder and Cox, *Yeomen and colliers*, especially pp. 20-41. Information kindly supplied by Mrs Nancy Cox who is currently compiling a *Dictionary of traded goods* at the University of Wolverhampton using an extensive national sample of probate inventories. The point is also inferred by Weatherill, *Consumer behaviour*, passim,esp. pp. 209-14. Chartres indicates that 'many examples of the carriage of such goods [cloths, wools and manufactures by coastal and river transport] can be found', yet his discussion focuses primarily upon local markets and road transport: Chartres, *Internal trade*, pp. 43, and pp. 36-7.

7 Even though the area was an important national centre for copper and tin ores, it remained agriculturally undeveloped and barely urbanised. Havinden, Quéniart, and Stanyer, (*Centre and Periphery*, Introduction) regard Devon and to a lesser extent Cornwall as less `peripheralised' in the seventeenth and eighteenth centuries owing to the profitability of the cloth industry and the wider export horizons enjoyed by the mining of metals and metal ore. However, such activities were more important to the southern areas of the peninsula than to the northern shores. See also Payton, *Cornwall*, pp. 43-70 for a more impassioned argument concerning historical 'difference'.

8 The undercapitalisation of south-west Wales is remarked upon by Howell, *Patriarchs and parasites*, pp.91-110 and is central to Hechter's thesis: *Internal colonialism.* Jenkins' summary of the incidence of harvest failure underlines the common experience of subsistence cropping at least outside the Vale of Glamorgan, *Foundations of modern Wales*, pp. 88-90. However, as a corrective see Emery's analysis of increasingly market orientated agrarian production on the southern coastal lowlands, 'Wales', pp.393-6; 409-17. For an urban perspective see Carter, 'Growth and decline of Welsh towns', pp. 47-62.

9 Hoskins, *Industry, trade and people*, pp. 180-4; Gerhold, 'Packhorses and wheeled vehicles', pp. 9, 21-2.

10 Willan *Coasting trade*, p. 172.

11 Minchinton, 'Bristol - metropolis', p.78.

12 Chappell, *Cardiff*; Rees, *Cardiff*; Williams, 'Cardiff', pp.74-97; Jenkins, *Foundations of Modern Wales*, p. 129; Dawson, *Commerce and customs*; Rees, *Milford*; Williams, 'Carmarthenshire's

maritime trade', pp.61-70; George, 'Pembrokeshire sea-trading', pp.1-39. Williams' work based on regional Port Books does, however, give a useful insight to the import trades: see Williams, 'Contribution to the commercial history of Glamorgan', and 'Further contributions to the commercial history of Glamorgan'. As for the south-west of England, much of Willan's initial findings have been largely re-emphasised without any further analysis. See Whetter, 'Cornish Trade', pp.402-3 for a more in-depth study.

13 Williams, 'Economic and social history of Glamorgan', pp. 359-60. See also Weatherill, *Consumer behaviour*, Chapter 1 and Shammas, *Pre-industrial consumer*, pp.1-14 for this type of imitative production of luxury wares.

14 Wakelin, 'Trade on the river Severn', pp. 124-8.

15 I would like to thank Peter Wakelin and especially Nancy Cox for discussions over this issue.

16 Because of the local practice of abbreviating the entries of shipments at Chepstow, there were only 21 commodities recorded, 3 of which occurred only once.

17 Willan. *Coasting trade*, pp. 167-70.

18 Andrews,'Chepstow', pp. 95-107.

19 For the importance of Liverpool in overseas markets, see Parkinson, *Liverpool*; and Clemens, 'Liverpool', pp. 211-25. For developments in the north-west directly impacting upon the port see Barker, 'Lancashire coal, Cheshire salt', pp. 83-101 and Harris, (ed.), *Liverpool and Merseyside.*, Introduction.

20 See Craig, 'Shipping and shipbuilding in Chester' and 'Trade and shipping of the Dee'; Jarvis, 'Chester and Liverpool'; 'Port of Lancaster'.

21 Double counting, for example, is not an insignificant factor at Bristol and Gloucester. Thus, a cargo entry of '3 tons, 12 hogsheads and 4 barrels of Spanish wine' would appear in the databases as three separate items according to each measure. See Wakelin, 'Trade on the river Severn', pp.128-30 and n.14 where the means by which commodities expressed in multiple measures is treated by customs clerks and the computer is discussed. Very occasionally, Customs officials repeated commodities in the form of addenda, indicated by the comment 'more'. This has been maintained in the databases and transcribed in the Cargo Additional field.

22 See Chapter 1 passim. Cardiff's record omitted the trade of its creeks, and all other minor trade apart from that to Bristol. At Tenby, the 1699 sample records only 10 voyages inwards, five of which (and probably two further shipments for which to port is given) were large miscellaneous cargoes from Bristol.

23 Lignum vitae, or the wood of life, was the product of the Guaiacum and used extensively for medicinal purposes and as an 'incomparable' material for small turned goods: Houghton, *Husbandry*, III, 521. Many thanks to Nancy Cox for supplying this reference. It was traded mainly from Bristol.

24 Ambiguous items such as 'ware' (which may have included goods from a number of sectors) or 'whiting' which may have described fish or more likely a form of colouring were not assigned a class. Such exclusions have only a minimal impact on the subsequent analysis of goods.

25 Wakelin, 'Trade on the river Severn', pp. 85-7; 130-3; Current developments of the Portbooks Programme databases have introduced forms of classification tailored more to the individual needs of the researcher: Milne and Paul, 'A flexible model for Port Book studies', pp. 114-5. See also Cox, 'Objects of worth', pp. 24-40. The forthcoming, *Gloucester Port Books database on CD-Rom*, (eds Cox, Hussey and Milne) will contain a glossary outlining such procedures.

26 Later, however, the growth of the bottled cider trade from the Severn and Wye suggests a degree of capital organisation more sophisticated than simple rural or bucolic forms of production.

27 For the importance of 'apple brandy' to Bristol see Chapter 2 and Latimer, *Annals of Bristol in the eighteenth century*, p. 7; 101. The growth of Bristol distilleries is charted in excise presentments held at the Mayor's Court: BAO 04434(3), f. 4-7; 8-10; 68; 88-9.

28 Bristol and much of the south-west operated independent salt 'factories' and pans refining rock salt brought coastwise from Liverpool and Chester. Hoare and Company were operating one at Ham Mills by 1696, (PRO C104/12 Part 1, f. 4) and William Alloway, junior had a part share in another 'salt work' at Bridgwater (SRO DD/DN/463 f. 2r; 24r) and also at Shepton Mallet (SRO DD/DN/463 f. 47). BAO 04449/1 f. 167v mentions 'salt made upon salt' by local factors. See also BAO 04434 (3), pp. 28, 70, 120-1, 132, 136, 178-9, 187 for Bristol salt refiners presented for circumventing the excise.

29 Wakelin, 'Trade on the river Severn', p.132.

30 As, for example, using the Bristol Port Books of 1695 to reconstruct trade lost in the mutilated portions of the Gloucester record of that year.

31 Spanish wool was in great demand by provincial clothiers: Bowden, *Wool trade*, pp. 27, 46-8, 182-3, 216; Mann, *Cloth industry*, pp. 7, 11, 14, 30-1, 266. A different perspective is given by Carlen, 'Spanish wool trade', pp. 775-796 and for a rather earlier period: Israel, 'Spanish wool exports', pp. 193-210.

32 Malt is included in these figures. The databases were searched for all strings containing '...wheat...'; '...barley...'; '...corn...'; '...oats...'; '...rye...'; '...pilcorn...'; '...peas...'; '...beans...'; and '...flour...'. See Wakelin 'Trade on the river Severn', pp.341-3 and n.27. In addition a further search of strings containing the terms '...grain...'; '...maslin...'; and '...bigg...' not included in the Gloucester sample was made.

33 Substantial differences may have existed between the bushels used throughout the region. Harrison suggests that a bushel twice the size of the 56 lbs/8 gallon Winchester bushel was in use in Devon and this varied between localities: Harrison, 'Agricultural weights and measures', p. 817. This may have been in operation at Barnstaple, Bideford and Ilfracombe especially as these ports occasionally record official 'Winchesters' or 'Winchester measure bushels' separately. At Exeter, however, the 8 gallon standard was in force if Houghton is to be credited: *Husbandry*, I, p. 132. In these ports, grain was not a major traded commodity. In addition, the 21 gallon bushel employed 'usually' at Falmouth may have applied to the Cornish ports, although this again is conjectural: Houghton, *Husbandry*, I, p. 132. Elsewhere the 8 gallon bushel appears to have been enforced: see Houghton for measures at Pembroke and Monmouth. The following conversions are taken from Zupko, *Dictionary*, Harrison, 'Agricultural weights and measures', pp. 815-25 and Houghton, *Husbandry*, I, pp. 132-4 and III, p. 46. Thus, Wey = 40 bushels; Quarter = 8; Strike = 2; Cwt = 2; Barrel = 4; Bag = 3; Sack = 4; Hogshead = 7.5; Box = 0.25; Quintal = 2: Butt = 15; Ton = 40; Cask = 4; Peck = 0.25; Tierce = 5.25; Last = 48; Basket = 1; Bundle = 0.67; Load = 4.5; Kilderkin = 2; Pocket = 2.25.

34 This has caused the class to be emphasised at these ports. At Bridgwater, for example, 282 voyages or 85% of all inwards shipments, carried Extractive goods, which included regular cargoes of hilling stones brought coastally from Padstow under letpass. These were not recorded in the Padstow Port Books.

35 See Woodward, 'Swords into ploughshares' for the important trade in old metalwares, clothing and rags.

36 Ashton, *Iron and steel*, p. 242; Minchinton, 'Bristol - metropolis', p. 82.

37 For a discussion of the output of Dean, see Hart, *Industrial history of Dean* and Hart, *Royal*

Forest.

38 See SRO D/B/bw 1895 and Q/Rua 12-14 (Bridgwater); DD/L 1 58/15, pp. 12-4 (Minehead); DD/L 1 55/2; DD/WY bx 41 (Watchet); NDRO BBT B6/7 f. 2v. 3v (Bideford).

39 They were also used as drugs and more occasionally for wooden wares: Houghton, *Husbandry*, III, 521.

40 If fish were recorded, and formed the sole item of shipment, they tended to proceed under letpasses and transires. The point is made with regard to the overseas Books by Grant, 'Port Books', p.62.

41 In the sample year, Padstow exported one consignment of cod and ling; St.Ives three consignments of cor fish; and Mount's Bay, a single consignment of English conger dole, English pickled herrings, English pilchards, and English pressed herrings.

42 Defoe, *Tour*, p. 242. See also Pococke's report in 1750 and Shaw's assessment of the Cornish fishery in 1788 quoted in Chope, *Early tours*, pp. 178-215; 215-33.

43 Scantlebury, 'Pilchard fishery'; Whetter, *Cornwall*, pp. 200-6; 'Cornish trade', pp. 405-7; Southward, Boalch, Maddock, 'Herring and Pilchard fisheries', pp. 37-8. See also Jenkins, *Herring fisheries* and Coull, *Fisheries of Europe*, for a wider perspective.

44 Both red and white herrings together with the very infrequently recorded amounts of pickled herrings have been included. The herring barrel usually held 30 gallons, although the ale barrel of 32 gallons was used occasionally. Conversions have followed Zupko, *Dictionary*, pp.15-6, 96-7, 104, except in the case of the 'last'. According to Zupko, 1 last equals 12 barrels herring containing 12,000 packed fish. On the other hand, Houghton, describing fish curing in 1702, stresses 10 barrels to a last. (*Husbandry*, III, 569). Houghton's estimate has been adopted. 1 mease equals 1/20 of a last or half a barrel. By this reckoning 1,000 loose fish constitute a barrel, though Houghton enumerates 700 'fat herrings' or 1,000 of any other sort. 34,000 loose herrings clearing Bideford for Looe were contained in 24 barrels and 6 hogsheads (=33 barrels or 1,030 fish per barrel). The 1,000 fish per barrel standard has been adopted throughout. Volumetric conversions have been adapted from the ale barrel: 1.5 Barrels = 1 hogshead; 4 hogsheads to a tun (= 6 Barrels); Cask = 2/5 barrel; Smallcask = 1/5. Also 1 Load = 18 bushel (Houghton, *Husbandry*, I, 132-4) = 144 gallons = 4.8 Barrels.

45 The importance of the trade to Minehead and its creeks Watchet and Porlock is revealed in SRO DD/L 1 55/3 petition for extension of quay duties, 1749; SRO T/PH/gc 10; copies of GRO D1799 E158, f.1.

46 Bristol imported 44% of all herrings traded and exported a mere 4%. Plymouth took 1,080 barrels (1,050 from Ilfracombe, 30 from Bideford); Falmouth 932 barrels (622 from Ilfracombe, 250 from Mount's Bay and 60 from Bideford); Looe 447 barrels (from Bideford); Dartmouth 202 barrels (142 from Ilfracombe, 60 from Milford); Exeter 125 barrels (Milford); London 72 barrels (Milford); Liverpool 22.5 barrels (Milford); Whitehaven 5 barrels (Milford); and Cowes 2 barrels (Bristol).

47 Whetter, 'Trade of Cornwall', p.114.

48 Hoare and Company, Waste Book, PRO C104/12 Pt 1, f. 158r, Galpine to Dyer in Barbados regarding the sale of 207 barrels of white herrings and 50 barrels of red, 1699. The shipment of 250,000 herrings in bulk from Bideford to Looe in 1699 was authorised 'in order to be exported from thence'. Houghton emphasises that both red herring and pilchard were frequently exported to the Mediterranean and 'especially Spain': *Husbandry*, III, 547-9.

49 See Latimer, *Annals of Bristol in the eighteenth century*, p.88. The Barnstaple bye-laws of 1690 emphasise that herrings brought to the town by coastal vessel must be retailed directly 'out of the boats' or at the appointed fish market and not until the day after landing: NDRO B1/1603, pp. 9-10.

50 For the importance of the Newfoundland Banks to the south-west, see Lounsbury, *British fishery*, pp. 135-42; Davis, *English shipping*, pp.235-6; Innes, *Cod fisheries*, pp. 102-11; Coull, *Fisheries of Europe*, pp.75-80; Fisher, 'South-west & the Atlantic trades', pp.7-14; Watkins, *Bideford*, pp. 58-62, and Stephens, 'West-country ports and the struggle for the Newfoundland fisheries'. The trade in fish brought coastways and overland to London is discussed by Stern, 'Fish marketing', pp. 68-77.

51 Innes enumerates 207 ships clearing Newfoundland ports of which 51 were from regional ports (30 from Bideford; 12 Barnstaple; 8 Bristol and a single voyage from Bridgwater). Only 5 shipments, where destinations were specified, were bound directly for domestic ports, the remainder discharged in the Mediterranean: *Cod fisheries*, pp.140-3.

52 Merchant account books confirm the importance of this trade: account book of Anthony Varder, senior, BAO AC B 64, f. 34r-v; account book of unnamed London merchant, NDRO B69/38 pp. 1, 45, 144, 162, 171 illustrates the independent nature of the Newfoundland cod trade with Genoa and Leghorn. Hoare and Company maintained a vigorous correspondence with factors in St, Johns and in Oporto in the trade in fish. PRO C/104/12 Pt 1, f. 154r; 174v; 179r. Fisher, *Portugal trade*, pp. 17-8; 71-6 gives a later perspective of the role of west-country merchants in importing cod. See also Braudel, *Wheels of commerce*, pp. 141, 211-4.

53 Bideford exported 48 barrels to Bristol and 4 to Bridgwater. Of the 2,282 barrels clearing Bristol, 202 were destined for Severn ports, 60 for Liverpool and London. All conversions are to the herring barrel as above. Also 1 Quintal = 1 CWT = 2/5 Barrel. This may have very marginally underestimated the amount of cod, pilchard, ling, conger and generic 'fish' recorded in the Port Books.

54 Llanelli has been excluded as no destinations are given in the 1699 record. Similarly, as all 31 of Cardiff's recorded voyages were to Bristol, quantification by destination would only replicate earlier figures. Mount's Bay with only four clearances was deemed too insignificant to warrant this type of analysis.

55 The main study outlining this approach is Minchinton, 'Bristol - metropolis'. See also the critique of this in the Introduction, passim.

56 One shipment was bound for Newnham and two cargoes for Gloucester were carried in Newnham boats.

57 The geographical groupings of Severn and Stratford Avon ports are discussed by Wakelin, 'Trade on the river Severn', pp. 100; 151-69. Ports from beyond the Severn hinterland have been compressed into a single 'OTHER' category. No attempt has been made to apportion the 6 unknown home ports by comparing boats and masters with other records. In 1699, the Bristol Port Book records one shipment to Newnham which went unrecorded in the Gloucester Books. The voyage of the *Blessing* of Brockweir, master and merchant Samuel Phillips from Bristol on 10 January 1699 bound for Gloucester was probably destined for Chepstow. It does not occur in the Gloucester record whilst a boat of the same description was recorded entering Chepstow on 4 February. In this instance the Bristol Book has been given precedence, although allowance has been made for possible scribal error.

58 For the role of the 'metropolitan' centre in sucking in raw materials from its hinterland see Fisher, 'London food market', p. 56-7, Wrigley, 'A simple model', pp. 55-7; Chartres, 'Food, consumption and internal trade', pp. 177-82, 184-6. The political dimension is explored by Ringrose, 'Metropolitan cities as parasites', pp. 21-38.

59 For trade in garden produce brought overland from Somerset, see Latimer, *Annals of Bristol in the seventeenth century*, pp. 72, 365. BAO 04264(8), 215r-216r; BAO 64274(2) Book of Ordinances, f.28, 86, 91.

60 In order of importance, Agricultural goods were represented on voyages clearing Bristol to the

following extra-regional ports in 1699: Plymouth (5 from 7 shipments); Liverpool (5 from 8); Topsham (2 from 7); Poole (2 from 2); Southampton (2 from 2); Newhaven (2 from 2); Whitehaven (2 from 2); Falmouth (1 from 3); and Cowes (1 from 1).

61 Nef, *Coal industry*, I, pp. 96-98; 107-8; 120-3; 442-8; Hatcher, *Coal industry*, pp. 178-81, for a discussion of the Bristol coalfield.

62 Bristol exported 6 tons of tobacco pipe clay to Bridgwater (1 shipment); 6.5 tons to Caerleon (3 shipments); 0.5 ton to Chepstow (1 shipment); 4 tons to Gloucester (2 shipments); and 0.625 tons (2 maunds; Zupko, *Dictionary*, pp. 103-4 for conversions, see lead measures below) to Minehead (1 shipment). 10 voyages carrying 215 tons cleared Bideford for Bristol and a further 38 tons in two shipments cleared Barnstaple in 1699.

63 In all, Bristol exported 183 tons of pot clay coastally in 1699. It imported 473 tons from Bewdley in 46 shipments, 102 tons from Gloucester in 10 shipments and 6.25 tons (25 hogsheads - 4 hogsheads to a ton: Zupko, *Dictionary*, pp. 78-9) from Worcester in 2 shipments. The destination of a further 20 tons on a Bewdley boat was indecipherable.

64 Broseley was a major producer of pipes. Many were shipped through Upton-on-Severn to south Wales: Wakelin, 'Trade on the river Severn', pp. 161-3 after Higgins 'Clay tobacco pipes' and Atkinson, *Tobacco pipes of Broseley*. Barnstaple and to a lesser extent, Bideford also maintained a healthy trade in pipes: Grant, and Jemmett, 'Pipes and pipe-making in Barnstaple', pp. 439-553. In contrast, the Bristol pipe industry may have been geared for the overseas market: Pritchard, 'Tobacco pipes of Bristol', pp. 165-91; Jackson, and Price, 'Bristol clay pipes'; Price, Jackson, and Jackson, *Bristol clay pipe makers*; Walker, *Clay tobacco pipes*. See also Evans, 'Clay-pipe makers in Wales', pp.36- 63.

65 Minchinton, 'Bristol - metropolis', p. 77. See also Baddeley, 'A glass house at Nailsworth', pp. 89-95; Buckley, 'Early glass-houses of Bristol', pp. 36-61; Powell, 'Glass making in Bristol', pp. 211-57; Weeden, 'Bristol glass industry'.

66 In total an equivalent of 15,300 dozen glass bottles were exported form Bristol in the sample year, assuming that a 'naive' dozen of 12 is adopted for the purposes of conversions. Thus, a gross is equivalent to 1.67 dozen and individually recorded items at one-twelfth. 4,722 dozen were dispatched to Severn ports (Worcester took 2,167; Gloucester 1,403); Somerset 1,607 (1,407 to Bridgwater); Barnstaple and Bideford 1,666; Padstow 98; Milford 121; Swansea 55; Chepstow 102; Extra-regional ports 6,329 (Topsham 2,500; Plymouth 1,711; Newhaven 1,100); Unknown 600. These figures must be seen as minima as only glass bottles have been enumerated: 'empty bottles' or plain 'bottles' have been excluded from the search as their material composition cannot be verified.

67 The accounts of Humphrey Perrot's glassworks in Bristol show that much glass was traded overland: Wiltshire Record Office 1178/618/1-2 quoted in Bettey, 'Bristol glassworks', p. 16. Glass and glass bottles also appear to have been traded on occasion under letpasses, particularly if the cargo was small or taken on board as a makeweight. An entry in the Bridgwater Port Book for 1703 registers a letpass cargo of 800 dozen bottles clearing Bristol. This was carried alongside a Gloucester to Bridgwater coquet-bearing voyage carrying, under separate documentation, wool and miscellaneous goods. See PRO E190 1100/06/10/21. The shipment, odd in that it demanded a break of voyage at Bristol, was not noted in the Bristol Book.

68 Woodward, 'Glass industry', pp. 36-42.

69 See Palfrey, 'Early Stourbridge industries'; and Woodward, 'Glass industry'. Stourbridge glass production was well advanced by the sixteenth century: C ssley, 'Glass industry'. I thank Dr. Barrie Trinder for useful comments on this section.

70 Cribs, cases and chests were the standard measures for glass, although hogsheads and other volumetric containers were occasionally used, generally for broken glass. Apart from the case at 1.75

cwt (Zupko, *Dictionary*, p.32), no effective conversions beyond haphazard approximations has been discovered for the more prevalent crib and chest. Randle Holme gives the crib of glass as 100 to 150 foot of cut glass and the case at 16 bunches of broad glass, the bunch being approximately equivalent to 3 pieces of broad glass measuring around a yard: *Academy of armory*, III, 385/1. A very rough conversion along these lines would render the crib of glass to be between 136 and 204 lb.

71 Items searched for were 'broken glass'; 'cut glass'; 'glass'; and 'window glass'. Glassware, such as 'drinking glasses'; 'glass bottles'; 'glass vials'; 'glasses'; 'glass + glass bottles' and 'glasswares' were excluded. This represented less than 10% of all strings containing the term '...glass...'. A further 9 shipments in Bewdley boats were destined for Bridgwater, with a single shipment indecipherable. In addition, boats of Evesham (3 voyages), Gloucester (1 voyage), and Worcester (two voyages) carried glass to Bristol. Bristol traded widely in small consignments of glass, some of which may have contained Severn ware. The principal areas of supply were extra-regional ports (17 shipments); south-west Wales (10 shipments) and north Devon (9 shipments).

72 Court, *Midland industries*, p. 124 quoted in Minchinton 'Bristol - metropolis', p.77.

73 Using the following conversions: Bushel = 56lb (Zupko *Dictionary*, p.25); Hogshead = 5cwt (Zupko, *Dictionary*, pp. 78-9 and grain measures below). 12 voyages cleared Bridgwater carrying soapers' ashes and 7 Minehead.

74 Personal communication from Nancy Cox.

75 Humphrey Perrot's glassworks was supplied with sand from local sources (Barton Regis and Lower Eason (sic Easton)); the Severn estuary (20 tons of Newnham sand is recorded); and the Isle of Wight (100 ton)). WRO 1178/619 Valuation of Glassworks, c.1730 quoted in Bettey, 'Bristol glassworks', pp. 16-20. The Gloucester Port Books for the period have no record of sand being shipped from Newnham. For sand grounds at regional ports, see SRO DD/WY/BX 40, Presentment of Watchet court leet, 1686; NDRO B1/1603, byelaws of Barnstaple Borough council, 1690, p.7; NDRO BI/2555 Barnstaple Receiver's Account, 1698/9 (unfoliated: 3 August 1699); NDRO 2239/B/add 5/m 1, Northam harbour, (typescript, p.2 articles 9 and 10).

76 Matthews, (ed.), 'Company of Soapmakers'. The Common Council levied a 20 mark fine upon any maker of black soap who used 'any composition or mixture of any traine rape oyle or tallow or any sort of base oyle or corrupt stuffe whatsoever': BAO 64274(2) Book of Ordinances, 1702, 31 n.53.

77 Information on castile soap kindly supplied by Nancy Cox. For retail prices of castile soap as opposed to 'ordinary' or hard soap see NDRO B69/38 f.152r. Irish soap was also imported into Bristol: the Deposition Books of Bristol record the shipment of 600 lb of 'hard white soap' from Waterford to Bristol aboard the Anne of Newnham and thence coastally to Barnstaple (and back again to Bristol) for want of sale. BAO 04439(3), f.16r.

78 The terms that were isolated from the databases were 'English made soap'; 'English soap'; and 'soap'. The following strings were excluded from analysis: 'soap ashes'; 'soapers ashes'; 'soap oil'; 'soap + brandy; and 'soap + candles'. The latter two combinations, however, represented less than 4% of the total search criteria. Conversions to the hundredweight have been adopted following the conventions outlined in Zupko, *Dictionary*: 1 Box – 14lb (a variable measure: Zupko gives a box of aloes as 14lb, p,23); Basket, 48lb (Zupko, p.17); Barrel = 2.5 cwt (Zupko states that the capacity of the butter or soap barrel conformed to the ale barrel of 280 lb, p.14); Hogshead = 2 Barrels = 5 cwt;Butt = 4 Barrels = 10 cwt; Cask = 2 cwt (Zupko gives various measures, the wine cask is taken here); Seron 3.125cwt (Zupko gives measures between 2.5 and 3.5, the average is taken); Fat = 3.5 cwt (Zupko gives measures between 3.25 and 4; the standard for isinglass has been adopted); Firkin = quarter ale barrel = 70lb; pot = 20lb; Kilderkin = 1.25 cwt; Rundlet is 'synonymous' with the kilderkin; Bushel = 56lb; Frail = 52.5lb (average from Zupko giving 30-75lb). Over 90% of all measures specified conformed to the ton, cwt, lb or barrel.

79 For domestic demand (and hygiene) see Houghton, *Husbandry*, I, 133.

80 In 1699, Bideford shipped 1 seron (3.125 cwt) of soap, initially imported from overseas; Bridgwater a further seron (3.125 cwt); and Milford 2 kilderkins (1.25 cwt). More may have been retained or traded overland in the locality.

81 Rowlands, *Masters and men*; 'Continuity and change', pp. 113-23; Johnson, 'The Foley partnerships', pp. 322-40; 'The Midland iron industry', pp. 67-74; 'The Stour valley iron industry', pp. 35-46; 'Charcoal iron industry', pp. 167-77; Hammersley, 'Charcoal iron industry', pp. 593-613; Riden, 'British iron industry'.

82 Day, *Bristol brass*; Avery 'Brass and copper', pp.43-56; Jenkins, 'Redbrook'; Day, 'The Costers'; Day, 'Copper, brass, and zinc production', pp. 145-63.

83 Iron regularly appeared in combination with a range of iron wares and steel and very frequently with other metals such as copper and tin. There is no way of simply disentangling the various descriptions and removing the metal in its various forms (pig iron, sow iron, wrought iron, bar iron, rolled iron for example) from manufactured items such as kettles and cauldrons. A similar situation exists for copper, although Avery has managed to extract a meaningful series of statistics for the trade through Gloucester. Avery, 'Brass and copper traffic', pp. 49-54.

84 See Beynon, 'Lead mining industry'; Lewis, *Lead mining in Wales* and Gough, *Mines of Mendip* for the sources of Bristol's supply and some indication of the amount traded coastally. With regard to coasting, Burt makes the valid point about the high degree of 'leakage' through overland trade and consumption 'Lead production', pp. 249-68.

85 Burt 'Lead production', p.258. Willan, *Coasting Trade*, pp. 72-3, 181-2 argues that Chester lead was 'probably' transshipped from Bristol. See also Burt, 'Non-ferrous metals industry', p. 35 for an assessment of lead mining as 'easily the largest and most important part of the non-ferrous mining sector in Britain'.

86 The following conversions have been adopted, following the general conventions of 1 cwt = 112lb and 1 ton = 20 cwt. Thus, Barrel = 2.5 cwt (Zupko gives this figure for a barrel of potash, *Dictionary*, p.16); Box = 14lb (Zupko, p. 23); Bag = 3 cwt (average from Zupko, p.11); maund 35lb (Zupko lists the capacity of a maund at 2 or 3 pecks, pp.103-4, a peck at a quarter of a Winchester bushel, p.118, and a bushel at 56lb, p.25).

87 Willan remarks that cheese was carried to London in this fashion in the later seventeenth century, *River Navigation*, p.2.

88 The Ironbridge Gorge was badly served by roads and thus fairly inaccessible. As such, it was not a centre of distribution like Shrewsbury or Bridgnorth. Personal communication from Dr. Malcolm Wanklyn. See also Wanklyn, 'Shrewsbury boats', p. 48 and 'Bridgnorth and the river trade', pp. 37-64.

89 Simon, *Wine trade*; Francis, *Wine trade*, pp.99-116; McLachlan, *Trade and peace with old Spain*; Fisher, *Portugal trade*, 77-86; Steckley, 'Wine economy of Tenerife'; Crawford, *Bristol and the wine trade*. Sacks, *Widening gate*, pp. 24-36, 55, charts the decline of the once-important late-medieval Bordeaux wine trade and the beginnings of the Iberian trade in the sixteenth century. See also Braudel, *Wheels of commerce*, p.229 and Braudel, *Mediterranean*, I, pp. 442-3.

90 For a recent critique of the marketability of Bath spa water see Fawcett, 'Selling the Bath waters', Neale, 'Ideology and utopia', pp. 225-7; Neale, *Bath*, pp. 13-18; Cunliffe, *Bath*, pp, 105-7, 112-3.

91 The growth of sugar refining in Bristol is detailed by Hall, 'John Knight', pp. 110-64; 'Temple Street sugar house', pp. 118-140; 'Whitson Court sugar house', pp. 1-97; and Stiles, 'Old Market sugar refinery', pp.10-17. The general aspects of refining are covered in Brooks, 'Sugar refining industry',

whilst for the trade and marketing of sugar, see Pares, *West India fortune* and 'London sugar market'; Thoms, 'The Mills family'; and Ward, 'Sugar planting'. For a wider perspective see Smout, 'Early Scottish sugar houses'; Stein, 'French sugar business'; Braudel, *Wheels of commerce*, pp. 190-4, 272-80.

92 Shamass analyses the consumption of sugar and rum as an index of changing consumer demand: *Pre-industrial consumer*, pp.81-3.

93 The databases were searched for all strings containing the terms, '...sugar...'; '...molasses...' and '...candy...'. Measures are represented in hundredweights after the following conversions: Hogshead = 5 cwt (Zupko, *Dictionary*, pp.78-9. See conversions for the barrel of lead at 2.5 cwt and the hogshead of tobacco, 450lb, at Bristol); Box = one-eighth cwt (lead as above); Cask = 2 cwt (Zupko, *Dictionary*, pp.33-4; Smallcask = 1 cwt (estimate at half a cask); Ton = 20 cwt. 3,309.5 cwt was recorded, 3,198.5 of which was divided between London (1,292 cwt); Liverpool (782 cwt); Topsham (542.5 cwt); Plymouth (485 cwt); Southampton (96 cwt); and Newhaven (1 cwt). Much more sugar may have been traded under 'grocery'.

94 Wakelin, 'Trade on the river Severn', pp. 211-54; MacInnes, *Tobacco trade; Gateway of Empire*, pp. 248-54; Morgan, 'Bristol and the Atlantic trade', pp. 642-6; Shammas, *Pre-industrial consumer*, pp. 78-81; Goodman, *Tobacco*, esp Ch. 2.

95 The Board of Trade suspected that a confederacy of corrupt officers was operating at Bristol Customs house. It was alleged that ships carrying wine, tobacco and other dutiable goods were discharged in an irregular fashion and that the Collector and Deputy Comptroller 'alter the Books higly (sic) to the prejudice of the revenue'. BM Add Mss 61611, Blenheim Papers. f. 234.

96 For the effect of smuggling in the overseas trade in tobacco and its knock-on effects in coasting see, Rive, 'Consumption of English tobacco'; 'Tobacco smuggling', pp. 554-69 and particularly Nash's informative discussion of the relative merits of avoiding the regional Customs: 'English and Scottish tobacco trades', pp. 354-372.

97 Conversions adopted to render measures into lbs have generally followed Wakelin, 'Trade on the river Severn', pp. 218-9 and n. 47. Thus, Ton = 2,240 lb; Cwt = 112 lb; Quarter = 28 lb; Cask = 224 lb; Smallcask = 112 lb; Roll = 20 lb. However, there are substantive differences in many of the more common measures and the conversions adopted by Wakelin may be in need of revision. Wakelin's attribution of 350 lb per hogshead, based on the 1684 Gloucester Port Book, is almost certainly an under-estimate. A complete breakdown of lb/measure ratios for all Port Books in the 1695-1704 sample suggests the regional weight was around 450 lb per hogshead. This represents the mean of a sample of 296 entries in which comparative calculation was possible. Given settling and the removal of damaged or damnified tobacco this figure equates rather better to other contemporary estimates (see Clemens, 'Liverpool', p.215 Table 2). Similarly Box = 50 lb; Bag = 100lb; Bundle = 150lb; Truss = 59lb have been reconstituted from Port Book data. Dryfat = 560 lb (Zupko, *Dictionary*, p.59, gives this as the weight of bristles: it occurs only once in the sample).

98 Worcester's share of the tobacco trade accounted for 41, 33, 60, 45 and 67% of trade bound for Severn ports in 1695, 1696, 1698, 1699, and 1701 respectively.

99 Cardiff's local creeks were almost as important as the headport. In 1699 Cardiff received 40,955 lb of tobacco, whilst Caerleon accounted for 22,185 lb; Newport 9,132 lb and Aberthaw 4,795 lb.

100 In addition, London received 66,194 lb, Liverpool 9,968 lb and Whitehaven 7,442 lb. For a wider discussion of tobacco at Liverpool see Clemens, 'Liverpool', pp. 215-7; 223. Whitehaven's growth as a major tobacco-importing port occurred later i the eighteenth century: see Beckett, *Coal and tobacco;* Eaglesham, *Whitehaven.*

101 This was the case with a cargo in which Thomas Power was interested. Arriving back from the Mediterranean with wine and tobacco, he reports that the (unnamed vessel) mastered by Mr

Vernon, 'is either gone or [is] to goe to Bristoll to discharge there and the goods to be sent thither' to London. NDRO B69/38 Letterbook of unknown London merchant, p. 129.

102 The figure represents a bare minimum. The absence of an inwards section in the Bristol Port Books again makes it difficult to reconstruct exactly trade clearing from ports beyond the region. See Chapters 1 and 2.

103 See Chapter 2; Watkins, Bideford, *pp. 66-7.*

104 This is despite the fact that Defoe extols Bristol as a centre for the manufacture of 'druggets, cantaloons, and other stuffs', *Tour,* p.256. See also Mann, *Cloth industry in the west of England,* Chapter 1.

105 In 1704, Bristol Common Council proposed to encourage the taking of fish 'by netts hookes & lines in the open river of Seavern upon the coast of England & Wales'. BAO 04264(9), p. 37.

106 Measurements of train oil have been converted to the wine hogshead of 63 gallons: Ton = 4 hogsheads; Pipe = 2 hogsheads; Barrel = 0.5 hogshead; tierce = 1.5 hogsheads; rundlet = 0.286 hogshead (18 rundlet = 1 ton); cask = 0.476 hogshead (the wine cask was equivalent to 30 gallons, internal evidence Portbooks databases); cwt = 0.25 hogsheads (the tobacco hogshead was roughly equivalent to 450 lbs, see above).

107 The process is detailed by Mann, *Cloth industry in the west of England,* pp. 282-4 and Jenkins, 'Woollen industry', pp. 96-7, 107. Although vegetable oils and olive oil in particular was preferable in the making of high quality and superfine cloths, train, or blubber oil was widely adopted and a cheaper substitute in the making of 'ordinary "sorting pack cloth" for export'.

108 All figures are converted from the 'hundred' in which the commodity was invariably measured. For the purpose of the research, the simple 'hundred' of 100 items has been adopted. It is acknowledged that this may well be an underestimate and the measure may refer to hundredweight, although it is unlikely in this instance . Thus, 'half hundred' = 50; 'quarter hundred' = 25. For the trade in deal see Kent, 'Anglo-Norweigan timber trade'.

109 Wakelin's analysis of the trade of Gloucester and the up-river ports between 1704-8 provides more comprehensive data than can be supplied here: 'Trade on the river Severn', pp. 144-69. See also Wanklyn, 'Shrewsbury boats', 'Bridgnorth' and Hussey, Milne, Wakelin and Wanklyn, *Summary.*

110 Mendenhall, *Shrewsbury drapers,* pp. 68-73, 216-30; Wanklyn, 'Shrewsbury boats', pp. 47-9.

111 Talbut, 'Worcester'. As a major river port and town, Worcester was also involved in translocating goods brought downstream from the upper Severn: personal communication Nancy Cox and Dr. Malcolm Wanklyn.

112 Wanklyn, 'Shrewsbury boats', pp. 49, 54-5.

113 Salt is discussed in more detail in Chapter 5. The Severn trade in salt is detailed comprehensively by Wakelin, 'Trade on the river Severn', pp. 181-96

114 Thirsk, 'South-west Midlands', p. 161-7, 184-7.; Thirsk, *Agricultural regions,* pp. 24, 42-3.

115 Harrison, 'South-west', pp. 360; 364; 372-3; Kerridge, *Agricultural revolution,* pp. 115-8; Thirsk, Agricultural regions, p. 14; Thick, 'Market gardening', p.507. .

116 See Table 3.7. The comparison is not wholly stable as the Minehead record of Midsummer 1699 to Midsummer 1700 effectively deals with two harvests.

117 Between 1695 and 1703, 131,500 cabbage plants were shipped from Bridgwater. Over half

(69,500 plants) were destined for Wales, the remainder to Bristol.

118 Thick has indicated the development of a distinct trade in garden seeds in this period: Thick 'Garden seeds - seed growing', pp. 1-13; Thick, 'Garden seeds - the trade in seeds', pp. 105-16.

119 Williams, *Somerset Levels,* pp. 110-15.

120 Harrison, 'South-west', p. 377 and Bettey, 'Livestock trade'. Trade increased dramatically after the embargo imposed on the import of Irish beasts from 1680, Woodward, 'Anglo-Irish livestock trade'. The sale of cattle and kine at local fairs was a marked feature of the region: Hamer, 'St. White Down Fair', pp. 61-70; Gerrard, 'Taunton Fair', pp. 65-74; Chartres, 'Marketing of agricultural produce', pp.421-2.

121 In the sample year, 119 cwt of cheese was shipped from Bridgwater in 5 voyages to Bristol and a further 31 cwt was traded to extra-regional ports in 3 shipments. There were also single shipments to Chepstow (6 cwt); Minehead (7 cwt); Barnstaple (18 cwt) and Swansea (16 cwt). In the same year, 211 cwt of cheese was traded from Gloucester to Bridgwater. Only 4 cwt of Liverpool-shipped cheese reached Somerset, being imported by Minehead.

122 Thirsk, 'English stocking knitting industry', p. 247 (reprint pagination).

123 4,473 barrels of herring were shipped in 44 voyages in the sample year. Almost three-quarters (3,225 barrels) were traded to Bristol.

124 The Bridgwater merchant, William Sealey, writing in 1701 to his son in law and agent in Exeter, John White, required that all serges be dispatched by the regular carrier, John Prickman. SRO DD/X/PG W/51/3 1, Letter Book of William Sealey, 1701-1703, unfoliated, Sealey to White 12 September 1701; Sealey to White, 16 September 1701.

125 This was despite developments in cultivating coppice woods and reed-beds in the Somerset Levels, Harrison, 'South-west', p. 387.

126 Harrison, 'South-west', p. 362, 375, 383; Stanes, 'Devon agriculture'; Fox, 'Outfield cultivation'.

127 PRO C104/12 Pt 1, f. 101v, 106r: Currant to Galpine 24/2/1697 and 9/3/1697.

128 Watkins, *Bideford, pp. 74-5.* The production and trade of earthenware at Barnstaple and Bideford is summarised by Grant, North Devon pottery. See also Weatherill, 'Growth of the pottery industry'; Grant and Jemmett, 'Pipes and pipe-making', pp. 439-553. The transatlantic trade is covered by Watkins, *North Devon pottery.*

129 The databases were investigated for the following strings: '...earthenware'; '...earthenwares'; 'earthen ...'; '...mugs...'; and '...pottery...', wherein '...' indicates a wild card search. The search specifically isolated combinations of commodities such as 'Glass bottles + earthenware + apothecary ware' or 'Bottled cider + empty bottles + glass vials + drinking glasses + earthenware' which may have obscured the data. The occurrence of such terms was however minimal, representing merely 7% of the Bristol sample (1695, 1696, 1698, 1699, 1701) and not occurring in either the ten year sample for Gloucester or Bideford.

130 'Dutch mugs' and 'Holland earthenware' represented less than 1% of earthenware shipments clearing Bristol between 1695 and 1703. Such commodities may not of course have originated in the Low Countries but may have been imitative of Dutch ware produced domestically.

131 For conversions to the piece, the crude numeric equivalents used by Weatherill have been adopted: 'Growth of the pottery industry: new evidence', pp. 17-8. Thus, dozen = 12 piece; score = 20 piece; and gross = 144 piece. The problem of converting non-specific volumetric measures has been

solved by adopting Weatherill's approximation of the crate/chest as 1 cwt or 100 pieces of earthenware throughout. The following conversions are taken from the volume to ratio measures of wine in bottles carried in containers as recorded in the Gloucester coastal Port Books between 1673 and 1765. Crate = 17 gallons = 100 pieces. Therefore basket = 0.35 crate = 35 pieces; maund = .47 crate = 47 piece (see also conversions for lead and shot based on Zupko, *Dictionary,* pp. 103-4 which would convert at 32 piece); Barrel = 1.85 crate = 185 piece, (Zupko, *Dictionary,* pp.13-17 and lead and soap conversions suggest a higher figure of 250 pieces. The measure only occurs once in over 6000 entries); box = 14 lb = 13 piece (Zupko, *Dictionary*, p. 23); pannier = 0.59 crate = 59 piece; hamper = basket = 35 piece; pack = 240lb = 214 piece (Zupko, *Dictionary*, pp. 115-6 gives 240lb as measure of wool and flax. Again this measure occurs only once throughout the ten-year sample); trunk = 24 piece (unattributed measure: the average of a box and basket is taken here); string = half a dozen (this is an unattributed measure used mostly at Bristol in conjunction with the trade in mugs: 6 is perhaps the average number). Multiple measures have been taken at the mean. Thus, crate + hamper = 67 piece; crate + maund = 73 piece. These conversions may underestimate the coastal exports of Bristol, particularly if a heavier crate which Weatherill suggests was used elsewhere, is adopted.

132 The significance of north Devon pipe clay, and its gradual supersession by Teignmouth clays is charted by Rolt, *Potter's field* and Grant and Jemmett, 'Pipes and pipe making', pp. 482-6. For a discussion of the trade to Gloucester see Hussey, Milne, Wakelin, and Wanklyn, *Summary.*

133 The most comprehensive account of the extraction of copper ore is in Barton, *Copper mining* and Hamilton, *Brass and copper industries.* For the importance of the 'melters' after deregulation of the metallurgical industries in the 1690's see Day, *Bristol brass*, pp. 20-33.

134 Personal communication from Peter F. Claughton from Cletscher's 'Relation...1696', (from Jenkins' translation in Liverpool University). I would like to thank Mr. Claughton for supplying the quotation and for his work upon the Barnstaple and Carmarthen coastal Port Books. A slightly different account of Cletscher's activities is presented by Day, *Bristol brass,* p. 31-2.

135For the production and trade in these commodities see Whetter, *Cornwall,* pp. 116-8, 121; Chapter 5 passim.

136 Fisher and Havinden, 'Economy of the south west England', in Havinden, Queniart, and Stanyer, (eds), *Centre and Periphery,* p. 77.

137 St. Ives also exported coastally 109 tons of copper ore to Bristol (in 5 shipments); 73 tons to Liverpool (2 shipments); and 16 tons to Neath (1 shipment). Of the 606 tons clearing Padstow, 522 was destined for Bristol (20 shipments); 54 to Chepstow (2 shipments) and 30 to Neath (1 shipment). Although a direct chronological comparison is not possible, figures from 1699 suggest that shipments from St. Ives formed over half of Chepstow's imports of copper ore. 363 tons were imported from north Cornwall as opposed to 330 tons from Truro and 11 tons transshipped from Bristol. For a greater discussion of the trade and use of ore see Jenkins, 'Redbrook', Day, 'Copper, brass and zinc production', pp. 131-99.

138 In total, 30 tons, 18 cwt was shipped to Bristol; 8 tons, 3.5 cwt to Chepstow; and 8 tons to Liverpool from the north Cornish ports in 1697. All figures have been converted to the standard ton of 20 cwt. Slobs or slabs of tin have been converted using the formula: 1 ton = 8 slobs from multiple measures given in the Padstow and St. Ives Port Books. For the mining, production and trade of tin and its impact upon local economies see Whetter, *Cornwall,* Chapter 5 passim and pp. 188-99, and Pennington, *Stannary law.*

139 Harrison makes this point strongly in 'South-west', pp.365-6. See also Fisher and Havinden, 'Economy of south-west England', pp. 77-80; Havind n and Stanes, 'Agriculture in south west England', pp.143-4, both in Havinden, Queniart, and Stanyer, eds., *Centre and Periphery.*

140 See Chapter 1. The only recorded cargoes in the period in which tin or copper ore were not present are PRO E190 1058/03/02/18 carrying wheat, chestnuts, mustard seed and pewter from St. Ives

to Bideford in 1697 and PRO E190 1055/17/01/16 clearing Padstow for Bristol with hilling stones, pewter, and elms in 1695.

141 Although comprehensive, Whetter's figures are likely to be under-estimates, due to the omission of hidden letpass trades: *Cornwall,* pp. 118-20 and Chapter 6 and pp.200-10.

142 See Rees, *Industry before the Industrial Revolution,* I, pp. 79-84 for a description of the coalfield and the types of anthracitic and bituminous coals extracted. Nef, *Coal industry,* I, pp. 52-6, Hatcher, *Coal industry,* pp. 135-41, Symons, *Llanelli,* pp. 26-38, and Edwards, 'Coal mining in Pembrokeshire' discuss mining and trade. George, 'Pembrokeshire sea-trading', makes useful additions to Willan's rather bald account of trading, *Coasting trade,* pp. 178-80.

143 Coal and culm were generally measured according to the chaldron. There has been much debate over whether the London measure chaldron of c1.4 tons was used throughout the region or more dubiously a notional Pembrokeshire chaldron of 2 tons was applied in south-west Wales. Throughout this thesis the London measure standard has been universally applied. See Hatcher, *Coal Industry,* pp. 567-9; Nef *Coal Industry,* II, pp. 369-71. Other measures have been converted as follows: barrel = 0.133 ton (Nef, *Coal industry,* pp. 371-2); wey = 5 tons (Hatcher, *Coal industry,* p. 571 after Symons, *Llanelli*); bushel 0.028 tons (Hatcher, Coal *Industry,* p. 568). See Chapter 5 for a more detailed discussion.

144 Bowen, *Wales,* pp. 333-6, 343-4; Emery, 'Wales', pp. 394, 416. For the role of landlords in agricultural development see Howell, *Patriarchs and parasites,* pp.50-2, 76-8, 83-4. For discussion of the wider issues of pays and English farming, see Everitt, 'Country, county, town', pp. 79-108; Langton, 'The industrial revolution and the regional geography of England', p. 149.

145 Milford was by far the most important centre transporting 57,614 bushels of mostly wheat and barley in 94 shipments in 1699. Carmarthen dealt largely in oats and oatmeal, exported 19,305 bushels at the high average shipment of 878 bushels per voyage (22). At Tenby 10 voyages carried 3,967 bushels.

146 Although Osborne focuses his argument upon Glamorgan and the vale, his conclusions are equally apt for Carmarthenshire and Pembrokeshire: 'Glamorgan agriculture', pp.387-405.

147 Chartres, *Internal trade,* pp. 26-7.

148 See Emery, 'Wales', pp.419-20; Bettey, 'Livestock trade' and above. No accurate comparison can be given between the relative positions of south Wales ports in the export of live animals as the Port Books of Swansea and Neath and particularly Cardiff are of limited value in noting this trade. Cattle droving also provided an important economic link in times of dearth or financial instability such as 1696: see Howell, *Patriarchs and parasites,* p.88-9; Colyer, *Welsh cattle drovers*; Prys-Jones, *Carmarthenshire,* pp. 291-9.

149 1,140 beasts were shipped to Bridgwater; 890 to Minehead; 575 to Watchet and 100 to Porlock. A further 5 swine were sent to Barnstaple, whilst 49 beasts were bound for an unspecified destination. The database was searched for the following terms: '...swine...'; '...pigs...'; and '...hogs...', wherein the wildcard function ('...') was used to include descriptors such as 'Welsh' or 'live' whilst isolating such corrupting data as 'pig iron'. In the 142 occurrences in the ten year sample less than 2% described terms other than 'swine'. Multiples have been converted to 'naive' units. Hence dozen = 12 and score = 20.

150 30 sheep, 25 cows and oxen, 7 cows, 2 lambs, 1 horse, and a cow and calf. An additional half a dozen hogs were shipped from Milford to Barnstaple.

151 Taking the ale barrel of 34 gallons as standard (Zupko, *Dictionary,* p.14). Bottled ale was also traded in a number of non-specific containers. Conversions to the barrel have thus been adopted according to those obtained for wine and earthenware. Hence, box = 0.13 barrel; dozen = 0.33 barrel;

trunk = 0.35 barrel; hogshead = 2 barrels; cask = barrel.

152 Bristol took the equivalent of 166 barrels in 11 shipments and London accounted for 85 barrels in 3 voyages. Other coastal importers were Barnstaple (14 barrels, 3 shipments); Liverpool (11 barrels; 4 shipments); Lancaster (3 barrels, 1 shipment); Whitehaven (3 barrels, 1 shipment); Bridgwater (2 barrels, 1 shipment); and Plymouth (1 barrel, 1 shipment).

153 14 barrels of oysters cleared Milford in 2 shipments for Bristol in 1699. Further single shipments took 12,000 oysters and 120 quarters of oysters to Gloucester; 20 casks to Liverpool; and 8 gallons to Whitehaven.

154 The coastal exports of South Burry have not been summarised as all 13 shipments recorded in 1701 were carrying small cargoes of coal to north Devon.

155 The geology and exploitation of the area is described in Howe, 'South Wales coalfield', esp. pp. 362-4 and Rees, *Industry before the Industrial Revolution*, I, pp. 79-93. The types and uses of Glamorganshire coal are analysed by Nef, *Coal industry*, I, pp. 52-4, Hatcher, Coal *Industry,* pp. 135-41; see also John, *South Wales*, Chapter 1. For the importance of coal to the development of Swansea see, Jones, *Swansea* and to Neath see, Trott, 'Coal mining in Neath'.

156 In 1695 and 1696 Swansea shipped 46% and 50% of Bridgwater's supplies, whilst Neath accounted for 32% and 29% respectively. In 1699, 1701 and 1703 Swansea supplied 14% of total quantities of mineral whereas 66%, 61% and 62% of coals and culm discharged from Neath. In 1697, both ports shipped 5,231.8 tons each or 39% of Bridgwater's annual import of coals and culm coastways.

157 *Case of Sir Humphrey Mackworth,* [BM 522, m 12 (2)], p.3

158 According to Mackworth, the coal enterprise was sabotaged by the Mansells of Britton Ferry and Swansea, who set about a campaign of misinformation regarding the quality and availability of Neath coal, vandalism (destroying the wooden rail-way leading from pit to waterfront) and coercion of ship's masters. Mackworth, *Case of Sir Humphrey Mackworth,* pp.4-12; Mackworth, *Affidavits, certificates, and presentments,* [BM 1132 f 30], pp. 24-40. See also Trott, 'Coal mining at Neath'.

159 Minchinton, *Tinplate industry,* pp.10-13.

160 Mackworth's Melincryddan works outside Neath was the most notable of these industrial enterprises: Roberts, 'Industrial expansion', pp. 115-6; Roberts, 'Non-ferrous metal smelting'; Rees, *Industry before the Industrial Revolution,* II, pp. 521-67. See also Burt, 'Non-ferrous metals industry', pp. 23-45.

161 Carter, 'Vale of Glamorgan and Gower', pp. 420-7; Emery, 'Wales', pp. 397-9, 416-7.

162 The distinction is made, with reservations, by Jenkins, *Making of a ruling class,* pp. 6-7.

163 Measures have been converted to the cwt of 112 lb. Thus, barrel = 256lb (Zupko, *Dictionary,* pp. 14-5); pot = 26 lb (Zupko, *Dictionary*, p. 132); cask = barrel, approximately; firkin = quarter barrel = 64lb (Zupko, *Dictionary*, pp.61-2); gallon = 1/32 barrel = 8lb (Zupko, Dictionary); smallparcel = 15 lb (approximation based on wine measures). Plymouth imported 105 cwt, Bridgwater 87 cwt and north Devon 67 cwt from Swansea in 1701.

164 Emery, 'Wales', pp. 399, 414-6; Jenkins, *Making of a ruling class*, pp. 13-5; 50-2; Jenkins, *Wales, 1642-1780*, pp. 88, 92. The most comprehensiv account of the importance of the Vale is Osbourne, 'Glamorgan agriculture'. See also, Williams, 'Economic and social history of Glamorgan', pp. 321-38 and his 'Economic and social life of the southern regions of Glamorgan', pp. 21-40.

165 Willan, *River navigation,* pp. 53-4; Thirsk, 'South-west Midlands', pp. 172-7; Emery, 'Wales',

pp. 396-7; Yates, 'South-east borderline', pp. 502-3.

166 Thirsk, 'South-west Midlands', pp. 160-2; Thirsk, 'Agricultural policy', p. 303, 310, 345; Jenkins, 'Industries of Herefordshire', pp. 184-5.

167 The trade in cereals represented 98% and 100% of quantities recorded at Chepstow and Cardiff. Improvements to the Wye, Lugg and even Bristol Avon were opposed by vested interests claiming potential over-supply of corn from Wales and the borderland: Willan, *River navigation,* p.46; Andrews, 'Chepstow'.

168 Martindale was looking to buy butter and cheese imported locally in the spring of 1693. In June he wrote to 'Brother' Curtis informing him that he had 'procured a firkin of butter ... and [had] left it at the place where Fielding the Marlbrow caryer does load': SRO DD/X/WI 36, Letters of Edward Martindale, 29 February 1693; 28 June 1693.

169 Jenkins, 'Redbrook'; Day 'The Costers', pp. 47-52. The literature on Forest of Dean iron production is vast. However, see Hart, *Industrial history of Dean,* pp. 8, passim; Johnson, 'Iron industry in the Forest of Dean', pp. 129-43; Johnson, 'Foley partnerships', pp. 333-4; Hammersley, 'Charcoal iron industry', pp. 593-613; Flinn, 'Growth of the English iron industry', pp. 144-53; Schafer, '"Ironworks in partnership"', pp. 30-1; Schubert, *British iron and steel industry,* esp. p. 193. See also, Jenkins, 'Industries of Herefordshire', pp. 180-4.

170 All three centres exported goods in the period. See the discussion of livestock imports at Minehead and Appendices 3 and 4. From 1696, Hanbury was exporting iron and blackplate from his Pontypool works 'to customers in Bristol, Gloucester, London and the Midlands' presumably via Newport and the coastal trade, Minchinton, *Tinplate industry,* pp. 10, 13.

171 Rees, *Cardiff,* p. 204 describes the trade of the Taff, perhaps also embracing centres further upstream such as Llandaff. Dawson, *Commerce and Customs,* pp. 175-9, demonstrates unwittingly the defects in the Port Book record relating to Newport and Caerleon. See also Williams, 'Economic and social history of Glamorgan', pp. 342-3, 348-60; 'Cardiff', pp.74-97; 'Southern regions of Glamorgan', p.36 which discuss absolute levels of coasting, even though Williams was aware of the discrepancy that existed between the Port Books of Cardiff outwards and Minehead inwards: see 'A contribution to the commercial history of Glamorgan', and 'Further contributions to the commercial history of Glamorgan'.

172 This is elaborated more fully by Chartres, 'Marketing of agricultural produce', p. 447, quoting PRO C 5/136/11, 1698. Wood and timber was carried on 42% of voyages entering Gloucester from Chepstow, 73% entering Bridgwater, and on all shipments that discharged in Wye boats at Ilfracombe, Barnstaple, Bideford and Carmarthen.

173 The trade in rock and white salt and the conversions used with Port Book data are discussed more thoroughly in Chapter 5.

174 Rees, *Industry before the Industrial Revolution,* II, pp. 521-67; Burt, *Lead mining industry*; Trott, 'Coalmining in Neath', 47-74. Mackworth operated his own boat, the *Mine Adventurer,* mastered by Thomas Turner, to carry coal to Aberdovey, Cardigan and occasionally elsewhere. The integration of production and transport was designed 'to be a means to bring the coasters to more moderate terms, when they see the Company [of Mine Adventurers] are resolved to provide ships for themselves, if they refuse the trade': Mackworth, *Third Abstract* [BM 522 12 (47)], p.4.

175 Morgan, 'Bristol and the Atlantic trades', pp. 642-6, and *Bristol and the Atlantic trades,* Chapter 2, for a discussion of the competition to which Bristol was subjected, especially in the tobacco trades, from the 1740's. See also Minchinton, *Port of Brist l,* p.7.

Notes to Chapter 4: The organisation of regional trade.

1 Davis, 'English foreign trade', p. 85 (reprint pagination).

2 Westerfield, *Middlemen*, p.351.

3 Freeman, 'Introduction', p. 1. Complementary forms of transport and the complexity of transport organisation in the eighteenth century are also covered by (amongst others) Freeman, 'British cotton industry', Langton, *Geographical change*, Hay, *Packmen;* and Gerhold's recent and enlightening work, *Road transport before the railways.*

4 Willan, *Coasting trade*, Chapter IV especially pp. 34-42. See also, Nef, *Coal industry*, pp. 24-41; Sweezy, *Monopoly and competition*; Smith, *Sea coal to London*; and more recently Dietz, 'The north-east coal trade', pp. 280-94 for further details of the organisation of the east-coast coal trade. Both Hausman, 'English coastal coal trade', pp. 588-96 and Ville, 'Productivity growth', pp. 597-602 and 'Total factor productivity', pp. 355-70, offer interesting insights into the eighteenth century growth of the trade.

5 Willan, *Coasting trade*, pp. 34, 53-4, 171.

6 Woodward, *Elizabethan Chester*, pp.26-34; 57-72; 106-124.

7 Jackson, *Hull*, Chapter V, esp. pp. 115-20; Hinton, 'Port Books of Boston'; Evans, 'Seaborne trade of the port of Ipswich'. See also Elder, *Slave trade and Lancaster*, esp. pp. 19-36 for a study which focuses almost exclusively on the link between overseas trade and mercantile development.

8 Metters, 'Kings Lynn'.

9 The Port Books for the pre-Restoration period generally recorded the place of residence and occupation of the principal merchant, along with details of those standing surety fro the shipment. At Gloucester, the practice is noted from the first extant record of 1575 to 1636 when the practice stops. See Hussey, Milne, Wakelin and Wanklyn, *Summary*, introduction. For other contemporary examples of this see Lewis, *Welsh Port Books.*

10 Defoe, *Complete English tradesman*, i. 2, quoted in Willan, *Coasting trade*, pp. 47-8.

11 The corporate face of Bristol merchant life is discussed in McGrath, *Merchant Venturers of Bristol*; 'Merchant Venturers and the Port of Bristol'; and 'Society of Merchant Venturers in the City of Bristol' and Minchinton, 'Politics and the port of Bristol'. Much of the early work of Professors McGrath and Minchinton contains much material of relevance to the organisation of Bristol's merchant community in the seventeenth and eighteenth centuries: McGrath, *John Whitson* and 'Merchants and merchandise'; Minchinton, *Port of Bristol* and 'Trade of Bristol'. Bristol merchants were also heavily involved in the transatlantic and colonial trades: Morgan, 'Bristol merchants and the colonial trades'; Morgan, 'Bristol anfd the Atlantic trades'; Morgan, *Bristol and the Atlantic trades*; Richardson, 'Bristol, Africa and the eighteenth century slave trade to America'. See the discussion in Chapter 3, section ii. A rather different perspective on the organisation of trade in the later eighteenth century is contained in Press, *Merchant seamen of Bristol.*

12 Sacks, *Widening Gate.* See also his *Trade, society and politics* and 'Bristol's little businesses' for a greater discussion of these themes.

13 These criticisms are emphasised by Clark, 'Adventurous merchants', p. 160.

14 Westerfield's pioneering but dated study provides the best overview: *Middlemen*, Chapter VII, esp. 329-68; 412-16. Dr. Chartres' work on marketing has similarly illuminated the processes of domestic trade: *Internal trade*; 'Marketing of agricultural produce', esp. section H, pp.220- 46. For

studies of the Bristol Channel see the Introduction, section ii and iii, especially pp. 18-22.

15 Whetter, 'Bryan Rogers'; Bettey, 'Graffin Prankard'; Stembridge, *Goldney*; and Stembridge 'Bristol-Coalbrookdale connection' provide examples of local studies of merchants involved in the coasting trade.

16 Cox, 'Imagination and innovation'; Cox and Wakelin, 'Data derived'; Wakelin, 'Trade on the river Severn', pp. 201-10, 247-54.

17 Wakelin's discussion of salt carriage admits to these problems: 'Trade on the river Severn', pp. 201-4; 208-9. Similarly, in the importation of tobacco, Wakelin accedes that 'the circumstantial evidence of the amounts of tobacco [Severn merchants] carried ... might suggest that they did not buy and sell it': p. 252.

18 Cox and Wakelin, 'Data derived', pp.137-40. I thank Nancy Cox for helpful discussions concerning Darby's probable involvement in procuring back cargo from Bristol.

19 Wanklyn, 'Shrewsbury boats', pp. 38-44; 'Bridgnorth', pp. 50-1.

20 Sacks, *Widening gate*, p. xviii.

21 Woodward, *Elizabethan Chester*, p. 129.

22 For example, Sebastian Llewellyn, master and merchant of the *Comfort* of Bridgwater, was often noted as *Welling*, *Wheeling*, *Whelan*, and other variants. The surnames of naturalised Huguenots, such as the 'French Protestant', Andrew Grislier of Bideford, posed serious problems for the customs clerks. 15 versions of Grislier's surname were used in the sample. For the activity of Andrew Grislier and John, his brother in 1699, see PRO C104/12 Pt 1, f. 157r: Galpine to Harriss Cudlip and Company; f.162v: Galpine to Juliot; f. 166v: Galpine to Rogers; f. 180r: Galpine to Fishers; f. 183v: Galpine to Fishers.

23 See Chapter 2; Wakelin, 'Trade on the river Severn', p.82; Wakelin and Hussey, 'Gloucester Port Books database'.

24 It is likely that a proportion of such occurrences has not been accounted, particularly where traders are recorded at ports removed from their normal area of operation. Thus, between 1695 and 1703, William Williams is recorded sporadically in the Bridgwater Port Books, although seniority of shipper is not universally maintained.

25 At Gloucester, the presence of John Jones trading predominantly on Shrewsbury and Bridgnorth boats and Jonathan Jones, trading on Gloucester and Worcester vessels has complicated the process of enumeration. Customs clerks did not fastidiously distinguish the two forms of Christian name in all cases.

26 Herle was merchant of a Truro boat carrying block tin to Liverpool and salt back to Padstow. He was described in 1693 as 'a trading merchant [who] deals considerably in tyn' and 'trades yearly and every yeare ... in tyn and tyn affaires and that he is a merchant of very good reputation and creditt in his country': depositions of Richard Dunkyn and Richard Ley, PRO E134 5 W&M Mich 52; Whetter, *Cornwall*, pp. 63, 163,

27 He occurs at Bridgwater on eight separate occasions, Ilfracombe seven, Minehead four, Gloucester three, and Liverpool two. See also SRO DD/DN 463 account book of William Alloway junior, pp. 2-3 and SRO DD/DN 145, will of William All way, merchant of Bridgwater, 1719 proved 1722.

28 This may have been the Sir Edward of Trimsaran, Carmarthenshire, (d. 1720) or the Sir Edward of Margam (d. 1706): Jenkins, *Making of a ruling class*, pp. 203-4; Howell, 'Landlords and

estate management', p. 263, 295-7. Neither's seat was particularly close to Milford.

29 Willan, *Coasting trade*, pp. 46-7.

30 NDRO B 1 693, 694, 695, 695a: Barnstaple Coal Warden's accounts, 1670-2, 1678-80. For coal and culm ordered by Hoare and Company see Chapter 5 passim.

31 Wanklyn, 'Bridgnorth', pp. 45-6.

32 Willan, *Coasting trade*, pp.46, 52-3.

33 In the ten year sample, Isaac Heard of Bridgwater is recorded solely as a merchant in the Bridgwater Port Books. He appears as a master- merchant in the Bristol Port Books for 1695.

34 From 1688 wool was required to be carried under separate documentation which most commonly was 'merchanted' by an identifiably independent wool merchant or factor: Bowden, *Wool Trade*, pp. 200-2.

35 See Farr, 'Severn navigation and the trow'; Greenhill, 'Story of the Severn trow'.

36 Whetter, *Cornwall*, p.118; Rowe, *Cornwall*, p.19.

37 In other years Crofts was responsible for cargo discharging at St. Ives from Bristol and Liverpool in 1699.

38 In addition, Coster's boats carried bar iron, butter, cast iron plates, cider, grind and millstones, hoops, iron pots and backs, oats, oil, pewter, plumbers' tool and lead dross, rabbit skins, and spokes.

39 Cutt was master on the *Welcome*, *James*, and *John*. A Richard Whittington was master for one voyage on board the *Welcome*, whilst the *Royal Oak* of Bridgnorth was the only non-Redbrook vessel to have been chartered by Coster.

40 Juliot was an active overseas trader in this period. For the extent of his activities, see the discussion of his links and partnership with Hoare and Company in Chapter 5.

41 Joseph Alloway had shipping concerns at both Minehead and Watchet. He was dealing in rock salt and white herrings shipped by his brother William in 1697 and 1698 (SRO DD/DN 463, p. 60, 117). In 1714 'aged 55' he is mentioned shipping large quantities of wool from Wales in partnership with Christopher Devonshire and Sarah Hayman, (SRO DD/L 1 54/42). John Baston was similarly involved with William Alloway in 1699, SRO DD/DN 463 p. 132. In 1717, Baston was using the town beam to weigh wool brought from Wales, (SRO DD/L 1 54/42 wool dockets, 1710-18).

42 Cleveland remained an important agent for the wool William Alloway imported from Ireland throughout the period. SRO DD/DN 463, p. 111, 116. The Gloucester and Bridgwater Port Books confirm that Cleveland was a principal wool merchant on Bewdley, Worcester and Tewkesbury boats that carried salt to the area.

43 Of these, two were by land carriage to Bristol and Somerton, the Port Book noting that Hare had paid and secured all duties as merchant liable for the initial import of the goods into the country on board the *Patience* of Brest. See PRO E190 1099/01/15/01; 1099/07/16/03; 1099/07/16/05; 1099/07/16/07; 1099/07/16/11.

44 John Kirkpatrick, William Livingstone and Nicholas Philip were also responsible for small parcels of goods, predominantly French cloth, taken overland to Taunton and Exeter in this fashion.

45 Between 1695 and 1704, Hudson and Jefferies appear occasionally on wool coquets recorded in the Port Books of Bristol and Gloucester.

46 McGrath, 'Merchants and merchandise', p. xix.

47 McGrath, 'Merchants and merchandise', p. x.

48 Hackett was a signatory to a Merchant Venturers' petition of 1691 to Parliament concerning possible reorganisation of the East India Company. McGrath, 'Merchant Venturers of Bristol', p. 229.

49 Hackett was recorded as merchant of a Poole boat shipping goods to Minehead in 1700. This identification depends upon the corroboration of other primary sources (PRO C104\12 Pt 1, 156r), so it is possible, although unlikely, that some of the other 6 'independent' merchants recorded in the Bristol Port Books for 1699 may have been Bristol based. Other identifiably Bristol based merchants, for example Graffin Prankard, were occasionally noted in later coastal Port Books. See Wakelin, 'Trade on the river Severn', pp. 205-10, and also BRL B17368, f.12. Elton, who had important interests in copper and brass in Bristol, was recorded shipping copper ore from St. Ives to Bristol and Chepstow in 1697.

50 For Johnson see Parkinson, *Liverpool*, pp. 68-86. His activities in the region at this period are described in SRO DD/DN 463, pp. 20, 30, 35, 40, 41, 47-8, 52, 61-2, 66, 81, 117-8, 134; BRO 04449 (2) and PRO C104/12 Pt 1, f. 19r. For Cleveland see Parkinson, *Liverpool*, p. 69 and BRO 04449 (2) [unfoliated] 6/12/1704, 10/4/1706, 13/9/1707.

51 PRO C104/12 Pt 1, f. 111v: Neale to Galpine 7 May 1697.

52 Tuthill was enrolled as apprentice to Abraham Hooke, Merchant Venturer of Bristol, and Elizabeth, his wife, for seven years in 1693. His father, Francis, was described as an apothecary of Bridgwater: McGrath, 'Merchant Venturers of Bristol', p. 39. For Hooke's links with Hoare and Company see chapter 5 below.

53 PRO C104/12 Pt1, f. 112v: Tuthill to Galpine, 10 May 1697.

54 The vessel bore a coquet dated 10 May, the day on which Tuthill wrote of his inability to send the full quantity of goods.

55 McGrath, 'Merchants and merchandise', pp. xviii-xix; McGrath 'Merchant Venturers of Bristol', p. xx; Minchinton, 'Trade of Bristol', p. xvi;

56 Information derived from McGrath, 'Merchant Venturers of Bristol', pp. 30-3, passim; Minchinton, 'Politics and the port of Bristol', passim; Beavan, *Bristol Lists*; Latimer, *Society of Merchant Venturers*; *Annals of Bristol in seventeenth century*; *Annals of Bristol in the eighteenth century*. McGrath's assertion that the Society of Merchant Venturers did not apply a strict religious test in the mid-seventeenth century is born out by the number of Quaker merchants who were free: McGrath, *Merchant Venturers*, pp. 97-103. This openness may have changed by the early eighteenth century. See also Sacks, *Widening Gate*, Ch. 8 esp. pp. 270-77.

57 The conversions adopted in the case of the wine gallon have followed after Zupko, *Dictionary*, and gallon/volumetric container ratios derived from the Gloucester coastal Port Books database, 1679-1765. Thus, Butt - 126 gallons; hogshead - 63 gallons; barrel - 31.5 gallons; cask - 30 gallons; rundlet - 12 gallons; hamper - 7 gallons; basket - 6 gallons.

58 Beavan, *Bristol Lists*, passim. Mountjoy was also involved in ironfounding: BCL B6584 Actions in Tolzey and Pie Poudre Courts, 1725-7, f.69v 3 August 1726.

59 See Raistrick, *Quakers* for the careers of Lloyd (pp. 124, 192), Peters (p. 124) and Harford (p. 324). Lloyd's involvement with Darby and the Bristol Brass and Battery Company is outlined in Day *Bristol brass*, pp. 35-41. I also thank Nancy Cox for her comments on these merchants. See also Cox, 'Imagination and innovation', pp.130-1.

60 Harford was refused admittance to the society in 1711 on the grounds of his Quaker beliefs: Minchinton, 'Trade of Bristol', pp. 143, 144 n.8. Peters was involved with his fellow Quakers, Prankard and Darby in the Coalbrookdale iron concern (SRO DD/DN 423, Prankard to TH 21 April 1713). Martindale was an important tobacco shipper (SRO DD/X/WI 36) and Hackett was involved in the Spanish and East India trades in the early 1690's: McGrath, 'Merchant Venturers of Bristol', pp. 229; McGrath, 'Merchants and merchandise', pp. 163-4.

61 For the activity of Baker in salt and grain brought coastally to Bristol see Chapter 5 passim and BAO 04449(2), unfoliated, 6 December 1704 and SRO DD/DN 463, p.118.

62 For Scandrett see BAO 04434/3, 122-3, 162-4, 176-7; BAO 32835 AC/WO 6, AC/WO 1; BAO 280485 S11, S17, S34, P85. In 1702, Scandrett was presented for non-payment of the church rate: BAO 04434/3, 184-5, 219. Doleman was a prominent member of the Company of Mercers and Linendrapers, BCL B6584, f. 57v.

63 SRO DD/DN 463, p. 47.

64 Prankard was dealing in Irish tallow from Bristol using regular coasters to ship the commodity throughout the south-west: SRO DD/DN 423, f. 6, passim. Information kindly supplied by Nancy Cox (Dictionary Project, University of Wolverhampton). The Galton papers detailing the iron dealings of John Galton and Prankard in 1740-42, suggest that Swedish and German iron and steel was traded in a similar fashion: BCL B17368, nos. 5, 11, 13, 15. For Prankard's salt and other concerns see Wakelin, 'Trade on the river Severn', pp. 205-6 and Bettey, 'Prankard'.

65 PRO C104/12 Pt 1, f. 53v.: Warburton to Galpine.

66 See Chapter 5 passim.

67 Davis, 'English foreign trade, 1660-1700', p. 93; Davis, 'English foreign trade, 1700-1774', p. 100 (reprint paginations).

68 Wanklyn, 'Shrewsbury boats', pp. 36-7; Wanklyn 'Bridgnorth', pp. 53-9.

69 SRO DD/DN 463, p.138.

70 See, for example, Ville, *English shipowning*, pp. 55-7.

71 Willan, *Coasting trade*, pp. 46-54, Appendix 6, 7.

72 This is implied by Lewis, 'Welsh Port Books', p. xxviii and Sacks, 'Trade, society, and politics', p. 742. However, his overview of the pre- Civil War Port Books for Bristol presenting a generally critical and somewhat dismissive account must be viewed as pertaining almost entirely to the overseas Books. For an account of registration see Jarvis, 'Ship registry'.

73 Willan, *Coasting Trade*, pp. 217-9. See the discussion of Alloway above.

74 For a more detailed overview see Wanklyn, 'Working paper'; Wakelin, 'Trade on the river Severn', pp. 46-8; Hussey, Milne, Wakelin and Wanklyn, *Summary*.

75 See the pro forma entries put forward by Crouch, *Complete guide*, pp. 11-13 and in SRO DD/SF 2769: 'Instructions for the western ports'. It is clear that local port establishments did not always adhere to standard practice.

76 In 1699, the *John and Ann* of Minehead, mastered by William Harding and merchanted by Thomas Holwill brought 27 tons of white salt under letpass from Minehead to Bridgwater. The boat had previously brought salt from Liverpool.

77 From the Bristol Port Books, seven boats 'of' either Cardiff, Newport, Caerleon, or Aberthaw monopolised the trade to the area. At Minehead, the *Four Sisters* of Aberthaw (24 shipments) and the *Two Brothers* of Cardiff (4 shipments) were the only vessels trading to and from the port jurisdiction. However, Gloucester recorded 9 voyages of the *Thomas* of Upton, 2 of the *John and Mary* of Bewdley and one of the *Betty* of Bewdley trading with the Cardiff ports and at Bideford the *Hopewell* of Northam was involved in one voyage in the sample year.

78 Boats either 'of' Swansea, Oystermouth, Port Eynon or Newton were deemed to be local to Swansea. 227 other craft clearing Swansea in 1701 undertaking 389 shipments at an average of 1.71 voyages per vessel. The large amount of small craft from even smaller ports and the prevalence of the single shipment accounts for this and counterbalances the concentration of regular trade with Somerset and north and south Devon and Cornwall.

79 In the 1699 Bristol Port Books, of the 29 shipments to south-west Wales, only the *Roe Sloop* of Bristol was not of a 'local' designation. 6 boats were 'of' Milford, 2 'of' Carmarthen; 2 'of' Laugharne; and 1 each 'of' Tenby and Haverfordwest. Three vessels were unattributed.

80 Minchinton, 'The port of Bristol', p. 132 (reprint pagination).

81 There may well have been a *True Love* of Bristol, but Cockhill was more readily associated with Liverpool or Bideford ships in 1699 including a *True Love* of Liverpool.

82 Austin was master and merchant on four separate occasions and Bailey on three. In addition, the vessel undertook a single voyage under John Hooper in 1705, Edward Sanders in 1706, and Nicholas Clarke in 1707. There is no record of the trow in the Gloucester coastal Port Books after this date.

83 Musgrave figures, 1709-1771 [BM Add. MSS 11255] reproduced in full in Willan, *Coasting trade*, pp.220-2 and for Bristol in Minchinton, 'Trade of Bristol in the eighteenth century', p. 179. See also Andrews, 'English shipping', pp. 232-4.

84 Barrett, *History and antiquities of Bristol*, pp. 168, 184.

85 In total 360 ships belonged to Bristol with a total recorded tonnage of 56,908 tons employing 4,193 men. Coasting comprised 30 ships totalling 3,078 tons and occupying 192 crew: Barrett, *History and antiquities of Bristol*, pp. 189-90.

86 Minchinton, 'Trade of Bristol in the eighteenth century', p. 182 quoting BM Add MSS 38376 f. 806.

87 Andrews, 'English merchant shipping', pp. 232-5.

88 Willan, *Coastal trade*, p. 220; Jarvis, 'Ship registry', pp. 156-7, 159-61. The point is also emphasised by Davis, *English shipping industry*, pp. 395-6, 399, 403-6.

89 For the dimensions of the *Hope*: PRO C104/12 Pt 1, f.180r: Galpine to Messrs Fisher 5 August 1699; f.183v: Galpine to Messrs Fisher 8 November 1699. For Scott's proposed new ship: PRO C104/12 Pt 1, f.111r: Scott to Galpine 3 May 1697.

90 PRO C104/12 Pt 1, f.22r: Francis to Galpine 1/8/1696.

91 See Minchinton, 'Trade of Bristol in the eighteenth century', Appendix F (ii), p. 183.

92 Williams, 'Cardiff', pp. 93-4.

93 PRO C104/12 Part II f. 98v.: Smith to Galpine 20 February 1697. Smith was worried that corn shipped on board Thomas Claroe's trow, the *Thomas* of Upton would be subject to 'damage'

during a severe frost at Gloucester, 'it being an open vessell'.

94 Perry, 'Severn navigation', p. 277. See also Trinder, *Industrial Revolution in Shropshire*, pp. 104-6 and Wanklyn, 'Bridgnorth', pp. 43-5 for critiques.

95 Barrett, *History and antiquities of Bristol*, p. 189.

96 Trinder, *Industrial Revolution in Shropshire*, pp. 106-8. I thank Dr Trinder for his helpful suggestions regarding the tonnages of Shropshire trows.

97 Wakelin, 'Trade on the river Severn', pp. 106-7. Newnham became an important port in long-distance coasting later in the eighteenth century: Herbert, 'Newnham and London traders', pp. 93-100.

98 See Chapter 1 and Andrews, 'Chepstow'.

99 Davis, *English shipping industry*, pp. 44-5, 175-6.

100 Davis, *English shipping industry*, p.399, n.4. See also Willan, *Coasting trade*, pp. 15-16. For burthen tonnages of Severn trows in the late sixteenth and early seventeenth centuries see Hussey, Milne, Wakelin and Wanklyn, *Summary*.

101 Jarvis, 'Ship registry', p. 159. Davis, *English shipping*, pp. 20, 26-7; Harper, *Navigation laws*, p. 329; Usher, 'Growth of English shipping', p.467, 469, quoted in Rediker, *Between the Devil*, pp. 301-3.

102 PRO C104/12 Pt 1 f.154r: Galpine to Hoar 11 January 1699; f.160r: Galpine to Hoar 18 February 1699; f. 166v Galpine to Rogers 30 March 1699; f.183v Galpine to Messrs Fisher 8 November 1699.

103 See above section ii. passim. Overcounting at Bideford is possible owing to the designations of boats within the Taw-Torridge estuary.

104 See Stephens, 'West-country ports and the Newfoundland fisheries', for the activity of Devon boats.

105 See Jones, *Swansea* and Williams, 'Port Books of Swansea and Neath', pp.192-209.

106 Piel Island, later Barrow-in-Furness: see Jarvis, 'Head port of Chester'.

107 Willan, *Coasting trade*, Chapter VIII passim; Nef *Coal industry*, Chapter I, Appendix D; Hatcher, *Coal Industry.* , pp. 501-3.

108 Andrews, 'English merchant shipping', pp. 232-3.

109 I would like to thank Dr. Trinder for helpful discussion of these issues. See Trinder, *Industrial revolution in Shropshire*, pp. 104-8; Perry,'Severn navigation' pp. 277-8; Wanklyn, 'Bridgnorth', pp. 43-6.

110 Crowley, 'Of forestallers' in Crowley, *Select works*, p. 33.

Notes to Chapter 5: The coastal trade in operation.

1 The quote is from Willan, *Coasting trade*, p.54.

2 With regard to the Bristol Channel region, a number of studies have made use of surviving mercantile papers. For example, the Jefferies MSS and the Dickinson Papers have been quoted extensively by Minchinton, 'Trade of Bristol', pp. 82-101 and pp. 101-22. Similarly, Pares, *A West-India fortune* uses the Pinney papers to illustrate the late eighteenth century sugar trade with Bristol and Whetter has utilised the correspondence of Bryan Rogers of Falmouth in his survey of Cornish trade in the seventeenth century: *Cornwall*, pp.152-67

3 Chancery Masters' Exhibits, PRO C104/12 Pt 1, f.1-187. Hereafter quoted as *Hoare Letter Book*. Internal evidence suggests that the partnership may have been in at least informal operation by 1695 if not earlier. Writing to the Company from London in September 1696, Roger Hoare reported the outcome of an interview with the Board of Excise in that he 'had the good fortune to gett the majority of the Board on my side to allow so much salt duty free that was lost in the Providence last year'. *Hoare Letter Book*, f.53r. 7 November 1696.

4 This was initially undertaken in non-document mode using a Cambridge Z88 for import into DOS. See Kemmer, 'Cambridge Z88' for the dubious 'fun' of this procedure. The letters for 1696 to 1699 are being transferred to a customised version of *FoxPro* that has been developed by the *Dictionary Project* of the University of Wolverhampton. See Cox, 'Objects of worth', pp. 38-40 for a discussion of the prototype versions of this.

5 PRO C104/12 Pt 2., f. 188-378. Hereafter quoted as *Hoare Waste Book*.

6 PRO C104/12 Pt. 1, f. 379r-438r. Hereafter quoted as *Hoare Cash Book*.

7 PRO C104/12 Pt2 f. 1-48. Hereafter *Hoare Cellar Book*.

8 Only 6 cellars were in use at the time the inventory was compiled: *Hoare Cellar Book*, f. 2r-3r, and 3v-17v for details of commodities stored.

9 *Hoare Waste Book*, f. 190r.

10 Hoare was a prominent presbyterian and local landowner: Dunning, (ed.), *VCH. Somerset*, VI, p. 211, 229, 235.

11 *Hoare Letter Book*, f. 166v: Galpine to Alderman Hoare, 27 March 1699; 171v: Galpine to Alderman Hoare, 29 April 1699.

12 *Hoare Letter Book*, f.163v: Galpine to Hoare 11 March 1699.

13 *Hoare Letter Book*, f.118v Galpine to Hoare 6 April 1698. See also SRO Q/Rua 12.

14 *Hoare Letter Book*, f. 81v-82r: Hoare to Galpine, 14 January 1697.

15 *Hoare Letter Book*, f. 84r: Hoare to Galpine, 16 January 1697.

16 *Hoare Letter Book*, f.37r Galpine to Galpine 1 October 1696; 51v Wallis to Galpine 5 November 1696; 59v Wallis to Galpine 24 November 1696; 81r Galpine to Galpine 12 January 1697; 107v Wallis to Galpine 13 March 1697.

17 *Hoare Cash Book*, f. 404r 13 March 1699.

18 *Hoare Letter Book*, 37r Thomas Galpine to Nathaniel Galpine 1 October 1696 speaks of 'an

account of Mr Heard's business'. *Hoare Waste Book*, f.249r for Heard's coal ships.

19 *Hoare Letter Book*, f.1r.: Parsons to Drake 17 March 1696.

20 *Hoare Waste Book*, f.192v.; *Hoare Letter Book*, 1r-v; 5r Cockrem to Drake 8 June 1696; 8v Higginson to Drake 19 June 1696; 15r Lockyer to Galpine, 6 August 1696; 62r Drake to Company from Swansea 27 November 1696 and 63r, 14 November 1696.

21 *Hoare Letter Book*, f. 9v, Hooke to Drake, 20 June1696; f. 10r Hooke to Drake 07 July 1696 and to Hoare and Drake 08 July 1696

22 *Hoare Letter Book*, f. 81r Hooke to Drake: no date (January 1697?).

23 Balch (as mayor), Galpine, Harvey, Greenway, and Syms all signed a petition to preserve the Newfoundland fishery in 1709. BM Add MSS 61620, f.53b-54a.

24 *Hoare Waste Book*, f. 217r inventory of 'cash, ships, warehouse, cargos, efects [sic], and debts'.

25 *Hoare Waste Book*, 250r, 23 February 1697, refers to work undertaken by the 'Old Company ... before Lady Day last'.

26 Drake purchased Roberts' share: *Hoare Waste Book*, f.214r.

27 *Hoare Letter Book*, f. 159v, letters to Methwen in absence of Galpine, February 1699. Methwen also signed the Newfoundland petition in 1709: BM Add MSS 61620 f. 53b-54a. The Company traded with Paul and Ambrose Methwen of Bristol via the agency of William Methwen: *Hoare Waste Book*, f.349v.

28 *Hoare Letter Book*, f.152r: Galpine to Hoare 28 December 1698. In 1701, Ledgingham was consigning cargoes imported from overseas coastways (Bridgwater coastal Port Books).

29 *Hoare Letter Book*, f. 101v Lowbridge to Galpine 24 February 1697. Lowbridge was to be in Bridgwater on 23 and 24 March 1697 to settle his accounts hoping that 'it will be a convenient time to come to be admitted into your Company'. *Hoare Waste Book* (f. 256r) records that Lowbridge paid £300 to be admitted to the Company on 31 March 1697. In his transactions with the Company, it appears that Lowbridge was based in Exeter, although other evidence suggests that he was of Stourbridge. In 1694, a Richard Lowbridge was contracted to build a water engine for Bridgwater corporation, taking water from a source leased by George Balch: Dunning, (ed.), *VCH. Somerset*, VI, p. 228. Codrington's admittance is also recorded in *Hoare Waste Book*, f. 295r.

30 *Hoare Letter Book*, 157v Galpine to Hoare 6 February 1699. The Company appears to have consolidated the type of fractional ownership that was common at the time: see Ville 'English Shipowning', pp. 705-7.

31 *Hoare Letter Book*, 160r. Galpine to Hoare 18 February 1699. Coddrington had joined sometime in 1698. He was a signatory of the Newfoundland petition in 1709 9BM Add MSS 61620 Ff. 53b-54a). Whitehead had already agreed to put in 'two shares being £600 into this joynt stock': *Hoare Letter Book*, f.159v Galpine to Whitehead 15 February 1699. Juliot had already established links with the Company in part freighting a voyage to the Straits: *Hoare Letter Book* f. 124r Galpine to Juliot 27 May 1698.

32 *Hoare Letter Book*, f. 173r-v Galpine to Fisher 15 and 17 May 1699; f. 173v Galpine to Lowbridg 20 May 1699.

33 *Hoare Cellar Book*, f.25r.

34 The last entry in the cash book is dated 26 April 1700: *Hoare Cash Book*, f.425v-426r.

35 Balch and Company are recorded as paying duties inwards on 1200 lb tobacco on 27 May 1700 and 3 June 1700, subsequently shipped coastally from Bridgwater to Barnstaple on 31 May 1701. On 17 March 1703, 2 pipes of Canary wine were also shipped from Bridgwater to Barnstaple, after Balch and Company had initially paid all import duties. However, the date for this is not specified.

36 Nathaniel Galpine was trading under his own account by August 1700, being named as merchant in a voyage from Ilfracombe to Bridgwater. On 29 June 1701, a consignment of 20 chests of lemons and oranges shipped by George Perkes and John Tyler from Bridgwater to Gloucester was recorded as having paid all its duties by Nathaniel Galpine and Company. Galpine was involved as merchant in three other shipments in 1701 and a further three in 1703. Isaac Heard had always traded on his own account in addition to the goods he owned in partnership. On the same voyage to Gloucester in 1701, however, 4 pipes of canary wine were described as having paid all duties by Isaac Heard and Company.

37 *Hoare Letter Book*, f.184v-187r.

38 *Hoare Letter Book*, f.158r Galpine to Dyer 8 February 1699.

39 *Hoare Letter Book*, loose leaf insert undated (1696?).

40 *Hoare Letter Book*, f.103v John Galpine to Nathaniel Galpine 2 February 1697.

41 *Hoare Waste Book*, f.248v 10 February 1697.

42 *Hoare Letter Book*, f. 101v Currant to Galpine, 24 February 1697; 82v Tom to Galpine 13 January 1697, 49v Tom to Company 21 October 1696.

43 *Hoare Letter Book*, f.1v Hoare to Company 18 May 1696. *Hoare Waste Book*, f.374r: Thomas Hoare was directed to sell fish on behalf of the Company at Gloucester in November 1698.

44 The Company owned a five-twelfths share in the *Hannah* and a half share in Currant's ship, the *Exchange* in 1696 and 1697 respectively.

45 Lounsbury, *British fishery*, pp. 135-42; Davis, *English shipping*, pp.235-6; Innes, *Cod fisheries*, pp. 102-11; and Fisher, 'The south-west & the Atlantic trades', pp.7-14. Newfoundland fisheries are discussed for fully in Chapter 3.

46 See Chapter 3 above and Stern, 'Fish marketing'.

47 Coull, *Fisheries of Europe*, pp.78-80; Stephen, 'West country ports and the struggle for the Newfoundland fishery', passim.

48 In 1695, Bristol traded 4.72 tons of French salt to Caerleon and 0.79 ton to Liverpool. In 1696, 7.5 tons of French prize salt was shipped to Barnstaple and in 1701, 3.6 tons of Lisbon salt was dispatched to Watchet. Similarly, in 1699-1700 Minehead received 5.36 tons of French salt from Weymouth, and a further 9.75 tons from Bristol and 11.81 tons from Milford. 15.19 tons of Spanish salt was also imported from Bristol. In addition Minehead dispatched 19.27 tons of Bay salt to Bristol, Bridgwater, Ilfracombe and Swansea. In contrast, Bideford received 87.89 tons of French and Spanish salt mostly from Plymouth and Penryn in 1699.

49 General accounts of the smaller salt industries are given in Cross, 'Salt industry of Lymington', pp. 86-90; Ellis, 'Tyneside salt', pp. 45-58. The minor importance of Lymington salt to the region is also revealed in *Hoare Letter Book*, f.48v Cockrem to Galpine 23 October 1696; f.67r Cockrem to Galpine 15 December 1696. The occasional cargo of salt from Newcastle found its way into the region via ports of the south coast such as Truro, Penryn and Weymouth: *Hoare Letter Book*, f.48v Townson

to Smith 28 October 1696.

50 Chaloner, 'Salt in Cheshire', pp. 61-7.

51 Cheshire white and the more distinctive rock salt was traded wholly to Bristol generally in Shrewsbury boats. This point is developed by Wanklyn, 'Shrewsbury boats'. Whether salt from the Broseley and Kingley Wiche saltworks in Shropshire filtered into the river trade is hard to ascertain: Stamper, 'Shropshire salt industry', pp. 77-82.

52 Barker, 'Lancashire coal, Cheshire salt', pp. 83-8; Hughes, *Administration and finance*, Chapters 1, 2 and pp. 225-7; Chaloner, 'Salt in Cheshire', pp. 59-60.

53 Barker, 'Lancashire coal, Cheshire salt', pp. 88-92; Hughes, *Administration and finance*, pp. 228-38.

54 Harland (ed.), *Stout*, pp. 24-5 quoted in Chaloner, 'Salt in Cheshire', p.67.

55 BAO O4449/1 Bristol Quarter Sessions Doggett Books, 1695-1703, f. 167v, 169v.

56 Willan, *Coastal trade*, p. 185. There is no distinction made between shipments of white salt and rock salt. If the Winchester bushel of 56lb applied to white salt is used, the total quantity traded amounts to 2,385 tons. However, if rock salt, as is likely, formed a substantial part of trade, the figures would have to be adjusted according to the 120lb rock salt bushel then in operation.

57 For conversions see below.

58 Hughes, *Administration and finance*, pp. 225-6; *VCH Worcestershire*, Vol II, pp. 256-60; Berry, 'Droitwich and its salt industry', pp. 57-61; Wakelin, 'Trade on the river Severn', pp. 176-7.

59 Steynor's assertion that the price of salt had fallen from 1s. 6d. to 6d. a bushel appears to reflect prices at source (Hughes, *Administration and finance*, p. 226). Similarly, the reported decrease from 2s. to 5d. per bushel must also relate to production prices at Droitwich. (Berry, 'Droitwich and its salt industry', p.53; *VCH Worcestershire*, Vol II, pp. 260-1; Wakelin, 'Trade on the river Severn', p. 177). The Bristol Justices fixed the price of wich salt at between 4s. 6d. and 4s. 8d. per bushel and 'salt made upon salt' at between 5s. 6d. and 5s. 8d. per bushel in 1702 (BAO 04449/1 f. 167v, 169v).

60 Wakelin, 'Trade on the river Severn', pp. 174-5 and Table 5.2

61 See Chapter 3 and Table 3.36 for conversions. All references to rock salt have been isolated from Wakelin's figures and converted to the appropriate weight as outlined by the statutes of 1693, 1699 and 1702. Thus, from 1686 to June 1699, the 120lb rock salt bushel (= 2.14 white salt bushels) has been adopted. From June 1699 to 25 May 1702, the 75lb rock salt bushel was in use (= 1.34 white salt bushels) from when the standard 65lb bushel (= 1.16 white salt bushels) was adopted. By these conversions, 40 bushels = 1 ton. (Zupko, *Dictionary*, pp. 25-7, 172-3). See below and Chapter 3 for further discussion of bushel/ton conversions.

62 47.98 tons of salt were exported in the half year ending 25 December 1693, whilst another 11.55 tons of 'salt and malt' and 5.33 tons of 'salt, potashes and starch' were also carried. Similarly, in the half year ending 25 December 1694, 41.94 tons of salt were exported with a further 4.2 tons of 'wheat, malt and salt' transported. No account has been made in the figures quoted in the text of a proportional amount of salt carried in this way.

63 Hughes, *Administration and finance*, pp. 414-6; 357-64; 366-70.

64 22 CarII c8 s2: from 29 September 1670 the 'Winchester measure, containing eight gallons to the bushel' to be used only for grain and salt. Information kindly supplied by Nancy Cox from databases held by the *Dictionary Project*, University of Wolverhampton.

65 *Hoare Letter Book*, f.169v: Galpine to Hackett 18 April 1699.

66 The salt statutes are summarised in Barker, 'Lancashire coal, Cheshire salt', pp. 90-1 and Hughes, *Administration and finance*, p. 237.

67 See Willan, *Coasting trade*, pp. 100-2 where shipments of salt are neither differentiated nor converted into intelligible units. Wakelin's universal application of the Winchester bushel to all salt shipments, though insignificant to the major patterns of the Severn salt trade, underestimates the amount of rock salt traded: 'Trade on the river Severn', pp. 172-81.

68 *Hoare Letter Book*, f.169v-170r: Galpine to Hackett 18 April 1699.

69 *Hoare Letter Book*, f.170r: Galpine to Hyde 19 April 1699.

70 *Hoare Letter Book*, f.175v: Galpine to Hyde, 6 June 1699.

71 See below and BAO 04434/3 pp. 77-8 and 04449(2), (unfoliated) 10 April 1706, 11 December 1706, 3 May 1709, 14 March 1711 for the use of the official standard.

72 *Hoare Letter Book*, f. 174r.: Galpine to Hyde 24 April 1699.

73 Linebaugh, *London hanged*, p.162 commenting upon similar problems in the tobacco trade.

74 *Hoare Letter Book*, f. 92r: Ludlow to Galpine 31 January 1697.

75 This was the case of the four shipments of French salt arriving in Bideford from Plymouth in 1699.

76 *Hoare Letter Book*, f.167r: Galpine to Hackett 1 April 1699; f.169r: Galpine to Poole 12 April 1699 where overweight of 1 cwt per ton was unsuccessfully requested. Over-measure was also common in the south Wales coalfield: Symons, *Llanelli*, pp. 327-30.

77 In 1699 shipments of white salt from Chester and Minehead and rock salt from Bristol accounted for 8% of salt traded by quantity.

78 *Hoare Letter Book*, f.109r-v: Burnall to Galpine 26 April 1697.

79 In 1695, Minehead did not import salt from Gloucester and in the following year only a single voyage carrying 25 tons entered. In addition, 0.875 tons (10 bags) of salt recorded as bound for 'Bristol, Bridgwater, and Minehead' and the 30.25 tons carried in 3 separate voyages to 'Bridgwater and Minehead' in fact discharged at Bridgwater. 206.95 tons were shipped directly to Minehead from Gloucester in 1697, with a further 22.93 tons shared with various south Wales ports. Also in 1697, 36 tons traded to 'Bridgwater, Cardiff and Minehead' were discharged at Bridgwater (Bridgwater coastal Port Books). However, the 2.63 tons (14 hogsheads) carried to 'Newport, Cardiff, Bridgwater and Minehead' and the 20.3 tons (20 tons, 3 bags) that cleared Gloucester for 'Newport, Cardiff and Minehead' appear to have been off-loaded in south Wales. The absence of record for these ports and the fact that the Minehead series is not complete for the run of years makes the accurate destination of salt difficult.

80 A further 70.75 tons (2,830 bushels) was traded from Gloucester to 'Cardiff and Minehead' in 2 shipments and a single voyage carried 11.85 tons (474 bushels) to 'Minehead and Swansea'. It is impossible without the data for inwards shipments sadly not recorded at Cardiff or Swansea and Neath and not fully extant at Minehead for 1701 to reconstruct how much salt was traded to each port.

81 Neither Minehead nor Watchet are enumerated by Willan amongst the chief recipients of Liverpool shipped salt in 1690 which implies that if the ports received any salt it was less than that

received by Cardiff (37.5 tons, taking the 56lb Winchester bushel as the standard conversion). Willan , *Coasting trade*, pp. 184-5, n.1. By 1699, 85.15 tons were shipped to Minehead in 3 voyages, with a further 51.85 tons being dispatched to Watchet in two vessels.

82 *Hoare Letter Book*, f.129v: Galpine to Partington and Massy 6 August 1698.

83 *Hoare Letter Book*, f. 130r-v.: Galpine to Massie 23 August 1698, 27 August 1698.

84 *Hoare Letter Book*, f.134r-v: Galpine to Massie 12 September 1698.

85 For reasons of space, port codes as used in the research versions of the Port Book databases are used. Thus, 'LVR' represents Liverpool; 'GLC' Gloucester; 'BRS' Bristol; 'SWN' Swansea; 'CHS' Chester; 'NTH' Neath; 'CRD' Cardiff; 'MNH' Minehead; 'LND' London; and 'NWN' Newnham.

86 For the career of Johnson see Parkinson, *Liverpool*, Chapter 7; Barker, 'Lancashire coal, Cheshire salt', pp. 89-91; Hughes, *Administration and finance*, pp. 225-34, 239-42, 394-7. Johnson dealt in salt extensively throughout the region: BAO 04449 (2) Quarter Sessions Dockets, unfoliated 9/1/1705; SRO DD/DN 463, Account Book of William Alloway, pp. 66, 133-4. Parr supplied Alloway with salt from his works in 1699: SRO DD/DN 463, pp. 134-5. Warburton claimed to have found rock salt in 1693: *HOC Journals*, XI, p. 102 quoted in Barker 'Lancashire coal, Cheshire salt', pp. 87-8. Both Hyde and Warburton had regular dealings with Hoare and Company throughout its operation. See below for further discussion.

87 BAO 04449(2), Quarter Sessions Dockets, unfoliated, 6 December 1704

88 Hughes, *Administration and finance*, pp. 225, 237, 390, 395-6. Barker, 'Lancashire coal, Cheshire salt', pp. 86, 89, 93-4.

89 The later activities of Houghton are mentioned by Hughes, *Administration and finance*, pp. 393, 396-7, 404. Haydock was heavily involved in outstanding salt bonds in 1709: Hughes, *Administration and finance*, p. 395.

90 Nixon was to default on excise payment in 1708: Hughes, *Administration and finance*, p.391. Slyford was one the earliest pioneer entrepreneurs of the rock salt interest and the extension of the Weaver navigation: Hughes, *Administration and finance*, p. 225, 229-31, 233, 255- 60. In 1707 he unsuccessfully petitioned for Letters patent for 'a new way of making salt from the brine of the natural salt-springs and of the rock-salt of England without the use of any fewell or fire': Hughes, *Administration and finance*, p. 428; BM Add MSS 61620, f.17r.

91 A 'gentleman refiner', Hughes, *Administration and finance*, p. 237; Barker, 'Lancashire coal, Cheshire salt', p. 91 n.4.

92 *Hoare Waste Book*. f. 190r. Both vessels entered on 25 April 1696: PRO E190 1096/2/9/12-3.

93 *Hoare Waste Book*, f.191r.-192v. See below for how the Company's salt was distributed.

94 *Hoare Waste Book*, 190r, 192v. Burnall regularly sailed as supercargo in the *Blessing*: *Hoare Letter Book*, f. 66v. Cockrem to Galpine, 24 November 1696.

95 *Hoare Waste Book*, f.190r, 196r. Heard was a co-partner, holding two shares in the new Company in September 1696: *Hoare Waste Book*, f. 217r. For the activities of Robert Hyde see above.

96 The Bridgwater coastal Port Books reveal the forementioned *Blessing* with Robert Hyde acting as merchant completing a shipment of salt on 20 February 1696, five days before being chartered by Hoare and Company. The *Exchange* of Bridgwater, one quarter owned by Philip Cockrem, was frequently chartered by the Company throughout its operation: *Hoare Letter Book*, f. 5r, Cockrem to Drake, 8 June 1696; f. 66r, Cockrem to Galpine 19 November 1696; 66v, Cockrem to

Galpine 24 November 1696. The boat was included among the assets of the Company in September 1696: *Hoare Waste Book*, f. 214v. The *Hannah* of Bridgwater, five-twelfths owned by the Company, completed a voyage with mostly rock salt on 24 March 1696. All vessels were later to ship goods exclusively for Hoare and Company.

97 *Hoare Letter Book*, f. 1v, Currant to Hoare 8 April 1696; f.3r Minshall to Company (??23) April 1696. *Hoare Waste Book*, f. 197r. Currant acted as supercargo for the voyage, overseeing the transactions and acting as merchant. Nathaniel Hatherly appears in the Bridgwater Port Book as master.

98 *Hoare Letter Book*, f.4r Neale to Galpine 31 May 1696; f.5r Cockrem to Drake 8 June 1696; f.7r Cockrem to Galpine 11 JUne 1696; Neale to Company 12 June 1696. *Hoare Waste Book*, 199v-200v.

99 *Hoare Letter Book*, Pettitt to Company ff. 7v; 9v; 13v; 17v: Higginson to Company ff 8r; 9r; 11r; 17v: Thomas Webb to Galpine, f. 23r. The *Mary and Elizabeth* did not reach Bridgwater until 7 September the *Blessing* until 10 October. *Hoare Waste Book*, ff. 202r, 203r, 209r-v.

100 *Hoare Letter Book*, Page to Galpine f. 14v; Currant to Galpine, f. 19r, 20v; Warburton to Hoare, f. 19v, 21r. *Hoare Waste Book*, f.203v 20 August 1696.

101 The five-twelfths share in the *Hannah* was sold for £110 6s 8d on 19 October: *Hoare Waste Book*, f. 221r,

102 *Hoare Letter Book*, Hyde to Company 33r, 44r; Baldwin to Company 33v; Warburton to Galpine 39v. The cargo was sold on 3 December: *Hoare Waste Book*, 233r.

103 *Hoare Letter Book*, f. 39v. Warburton to Company 28 September 1696. *Hoare Waste Book*, ff. 226v-227r.

104 *Hoare letter Book*, f. 37v, 42r Neale to Galpine: f. 50v Webb to Hoare.

105 *Hoare Letter Book*, f. 61r Neale to Galpine 16 November 1696. The cargo was sold by 8 January 1697: *Hoare Waste Book*, f. 242r-v.

106 *Hoare Letter Book*, Higginson to Galpine ff. 45r, 50r; Webb to Hoare f. 50v. *Hoare Waste Book*, f. 225r. For Nathaniel Ludlow's salt, see *Hoare Letter Book*, f.91r Ludlow to Galpine, 31 January 1697; *Hoare Waste Book*, f.262v.

107 Higginson's salt was not completely offloaded until 4 January 1697. *Hoare Waste Book*, f.240r.

108 See above and *Hoare Waste Book*, f.256r for Lowbridge's admission in the Company.

109 On 7 October, Lowbridge hoped that 'Charles Corker and Edward Wheeler will be with you this week with a good parcell of salt'. On 21 October, Lowbridge anticipated that 'last Spring, Charles Corker's Trow and Edward Wheeler's did come to Bridgwater loaded with salt'. *Hoare Letter Book*, f. 42v Lowbridge to Galpine 7 October 1696; f.47r Lowbridge to Galpine 21 October 1696. It is not clear whether Wheeler was freighting another trow or was associated with Corker. No evidence from either the Port Book or the Waste Book supports any ventures additional to the *Providence* or the *Thomas* undertaken in 1696. An Edward Wheeler is included in the 1694 list of Droitwich salters: Hughes, *Administration and finance*, p. 379, n. 1456.

110 *Hoare Waste Book*, f.211v-212r. For the replacement of wood-fired lead pans by coal-fired iron pans see Hughes, *Administration and finance*, pp. 384, 403-5; Wakelin, following Berry, 'Borough of Droitwich', pp. 49-51, is convinced that iron pans had replaced lead pans by this time, 'Trade on the river Severn', p,177.

111 *Hoare Waste Book*, 225v, 229v. *Hoare Letter Book*, f.57v Padmore to Galpine, 12 November 1696.

112 *Hoare Letter Book*, f.57v Padmore to Galpine, 12 November 1696. As the letter implies, Padmore had important links with the Cheshire industry. At this time he was buying saw irons from Cheshire producers: Hodson, *Cheshire*, p.143.

113 *Hoare Letter Book*, f.57v Padmore to Galpine 12 November 1696: 'I have now sent Geo Pyrks about the same quantity as he had last voyage'. *Hoare Waste Book*, f.232v.

114 *Hoare Waste Book*, f.236v.

115 The *Endeavour* of Newnham bearing coquet from Liverpool dated 6 July 1696 and with John Fisher as the recorded merchant. *Hoare Waste Book*, f.199r. 2 cwt and 36 lbs recorded in the Port Book entry were not traded to Hoare and may have represented the crew's salt allowance. In September, Chinn angrily wrote to the Company claiming that discounted bills and referred bank notes had represented a loss on the deal 'which ought to be yours': *Hoare Letter Book*, f. 30v Chinn to Hoare, 4 September 1696.

116 *Hoare Letter Book*, f.14r Hyde to Galpine 28 July 1696; f.55v Partington to Methwen 9 November 1696. *Hoare Waste Book*, f. 222v.

117 *Hoare Waste Book*, f.220r, 230v.

118 *Hoare Letter Book*, f.48v Cockrem to Galpine 23 October 1696.

119 With 1,546 bushels (38.65 tons) of white salt loaded in January: *Hoare Letter Book*, f.83r Burnall to Hoare 10 January 1697.

120 Carrying 2,608 bushels (65.2 tons). Hoare Letter Book, *ff.94r-v Higginson to Galpine 8 and 9 February 1697.* Hoare Waste Book, *f.249r, 15 February.*

121 The *Providence* shipped 1,970 bushels of white salt (49.25 tons) from Liverpool in March: *Hoare Letter Book*, f. 104r Neale to Galpine 3 March; f. 105v Neale to Galpine 5 March. See also *Hoare Waste Book*, f.253r, 17 March.

122 *Hoare Letter Book*, f.85r Cockrem to Galpine 16 January; f.86r Cockrem to Galpine 21 January; f.92r Cockrem to Galpine 7 February. *Hoare Waste Book*, 272r-v. for the full itinerary of the convoluted voyages of the *Exchange* in 1696 and 1697.

123 This was the assessment of John Scott of Fowey: *Hoare Letter Book*, f.111r Scott to Galpine 3 May 1697. Nathaniel Dowdridge, a merchant of Plymouth and factor for Neale's salt reckoned that peace would bring cheap supplies of French salt: *Hoare Letter Book*, f.108v Dowdridge to Galpine 25 April 1697. Burnall finally discharged at Fowey; Higginson at Dartmouth, and Neale at Plymouth: *Hoare Letter Book*, f. 110v Burnall to Galpine 3 May 1697; f.111v Neale to Galpine 7 May 1697; *Hoare Waste Book*, f.272v itinerary of the *Providence*; f.278v itinerary of the *Mary and Elizabeth.*

124 *Hoare Letter Book*, f.92r Dashwood to Galpine 5 February 1697; f.100r Dashwood to Galpine 15 February; f.107r Dashwood to Galpine 6 March 1697. *Hoare Waste Book*, f.262v.

125 *Hoare Waste Book*, f.262v, 271r. The boat was purchased by Currant in February 1697, a three-quarter share of which was held by the Company: *Hoare Waste Book*, f. 248v, 10 February.

126 *Hoare Waste Book*, f. 298r completion of the *Hope*, 27 September; 308v completion of the *Michael* 8 December.

127 *Hoare Waste Book*, f.313v, account of the *Exchange* 14 January 1698.

128 *Hoare Letter Book*, f. 83v Lowbridge to Galpine 16 January; f.95v Lowbridge to Galpine 9 February; f.101v Lowbridge to Galpine 24 February. Corker's shipments, disbursements and the sale of salt brought on his trows are listed in *Hoare Waste Book*, f. 244r-v; 251r; 255r-v; 256v; 260r; 278r; 290v; 294v

129 Claroe's shipments are recorded in *Hoare Waste Book*, f. 275r-276r; 282r; 307v.

130 *Hoare Waste Book*, f.310v.

131 See *Hoare Waste Book*, f.320r-v. For the career of Steynor, see Hughes *Administration and finance*, pp. 225-36, 378-9; Berry 'Borough of Droitwich', pp.46-50.

132 The Jacksons were one of three major families of Bridgnorth trow owners in the 1690s. By 1714, they had moved to Worcester following the salt trade: Wanklyn, 'Bridgnorth and the river trade', pp. 47-8, n.39. In 1697, Edward Jackson ranked a remote fifteenth in Wakelin's list of Severn salt 'merchants' with the single shipment to Bridgwater of 800 bushels (20 tons). By 1733, he appeared as merchant on 38 voyages carrying for 77,837 bushels (1,945.93 tons) of salt. At this time he was by far the most important Severn trader, accounting for over a quarter of all salt clearing Gloucester. Wakelin, 'Trade on the river Severn', pp. 202-4.

133 The *Charles* entered Bridgwater on 7 January 1698 carrying 40 tons of salt, 39.75 tons of which were sold to the regular customers of the Company: *Hoare Waste Book*, f.320 r-v. Jackson also sold the Company 178 Cheshire cheeses carried by the *Charles*: *Hoare Waste Book*, f.320r. A further 35 tons were delivered in March (*Hoare Waste Book*, f. 328r) and a final consignment of 19 tons and 18 cwt were discharged on the account of the Company from a cargo of 41 tons of white salt on 5 April, (*Hoare Waste Book*, f. 337v).

134 *Hoare Waste Book*, f.331v-332r. 39 ton and 17 cwt (2 cwt overweight) were received from Steynor 'out off (sic) Owner Chance['s] trow' and discharged by 17 March.

135 *Hoare Waste Book*, f.326v, 358v.

136 *Hoare Letter Book*, f.129v Galpine to Padmore 17 and 18 August 1698; f.132r-v Galpine to Padmore 5 September 1698.

137 *Hoare Waste Book*, f.363r. Corker delivered 22 tons 1 cwt of salt, although the Port Book records the standard 20 ton. See also *Hoare Letter Book*, f.133r Galpine to Padmore 7 September 1698.

138 *Hoare Waste Book*, f.369r; 372v; 375v. *Hoare Letter Book*, f.145r Galpine to Herbert 19 November 1698; *Hoare Cash Book*, f. 388v records 1 ton, 3 cwt of clod salt delivered to cellar K. Clod salt was made from the residue of the boiling process: Plot, *Staffordshire*, pp. 93-6, Wakelin, 'Trade on the river Severn', p. 171.

139 The Company bought the salt from Claroe on 9 May, selling it on by 14 May: *Hoare Waste Book*, f. 344r, 345r. Writing to Hoare on 18 May, Galpine emphasised that '... as to engrossing salt we bought none but 20 ton in our river that had lain a fortnight for sayles': *Hoare Letter Book*, f.122v.

140 The *Elizabeth* was recorded as carrying 36 tons in the Bridgwater Port Book. In the accompanying wool coquet, William Smith is named as the merchant. The 1.7 ton overweight may be explained as allowance or may have been acquired elsewhere: *Hoare Waste Book*, 355r.

141 *Hoare Letter Book*, f.144v. The Norris family were to rise to some importance. Thomas and Richard Norris were listed as principal Droitwich salt proprietors in Cardonel's list of 1732: Hughes, *Administration and finance*, p. 379, n.1456. A James Norris was also freighting salt vessels to Bristol

in 1733. Wakelin conjectures a familial link with the Droitwich proprietors: 'Trade on the river Severn', p. 207.

142 For the prior activity of Throgmorton's steward see *Hoare Letter Book*, f.129v Galpine to Padmore 17 August 1698. The salt so acquired was mostly retained by the Company's factory at Ham Mills: *Hoare Waste Book*, f.365v.

143 *Hoare Waste Book*, f. 370v, 375v-376r. The Bridgwater Port Book records the second of these shipments bearing coquet of 24 November from Gloucester twice. Only one shipment has been accounted for in the text.

144 *Hoare Letter Book*, f.147r Galpine to Norris 7 December 1698.

145 During 1698, the *Fly* was occupied in a voyage to Waterford, the Canaries returning home via France; the *Mary and Elizabeth* was dispatched to Virginia on two occasions; the *Hope* for Bilbao; the *Friendship* for Spain and France; the *Betty* for the West Indies; and the *Michael* for Newfoundland.

146 *Hoare Waste Book*, f.339v, 350v. *Hoare Letter Book*, f.122r Galpine to Hoare 14 May 1698; f. 123r Galpine to Hoare 21 May 1698.

147 *Hoare Letter Book*, f.129r Galpine to Partington and Massy 6 August 1698; f.130v Galpine to Massie 27 August; f.131r Galpine to Vinecott 28 August; f. 134r-v Galpine to Massie 12 September. *Hoare Waste Book*, f. 372r: the voyage ended on 29 October.

148 *Hoare Letter Book*, 130r Galpine to Hyde 23 August 1698. *Hoare Waste Book*, f.368r-v, 371v.

149 See above: *Hoare Cash Book* f.402r 28 February 1699 records Oakes being paid for freight and Norris for 211 tons 15 cwt of salt to be delivered at Bridgwater.

150 *Hoare Letter Book*, f. 169r Galpine to Poole 12 April 1699; *Hoare Cash Book*, f. 414v-415r records salt purchased out of 'Clarke's trow', 26 May 1699 and payment to Norris on the same date.

151 *Hoare Cash Book*, f. 402r 7 March 1698. The *Samuel* arrived in Bridgwater on 3 March.

152 *Hoare letter Book*, f.150r Galpine to Padmore 17 December 1698; f.153v Galpine to Hall 28 December 1698. Padmore was reimbursed for weighing out 46 tons of white salt at Worcester on 7 March: *Hoare Cash Book*, f.403r.

153 *Hoare Cash Book*, f.404r records a payment made to Corker for freight on 14 April.

154 *Hoare Letter Book*, f.169r Galpine to Messrs Hall and Penrice 12 April 1699. Penrice may be equated with either Gilbert Penrice a 'substantial salter in William III's reign' who died in 1722 or Robert Penrice who appeared (as did Gilbert in the 1694 list of proprietors at Droitwich: Hughes *Administration and finance*, pp. 379-80.

155 The *Hope* was dispatched in November 1698: *Hoare Letter Book*, f.150v Galpine to Hyde 17 December; f.151r Galpine to Hyde 26 December; f.151v Galpine to Currant 28 December 1698; f.152r Galpine to Hyde 28 December.

156 Heard was still a member of the Company when the coquet for the *Elizabeth* was granted (10 December 1698), although it is clear that by February he was anxious to quit the partnership. See *Hoare Letter Book*, f.160v Galpine to Hoare 18 February 1699.

157 The Speedwell set off on 20 February: *Hoare Letter Book*, f.160v Galpine to Partington. On 17 March Galpine ordered Massey and Partington to load rock and white, specifying mostly rock in a letter dated twelve days later: *Hoare Letter Book*, f. 165r, 166v. Galpine's final order was that if

Partington had not forwarded rock salt 'nor yett freighted for us, forbear either, but dispatch the *Speedwell* with white salt': *Hoare Letter Book*, f.168v Galpine to Partington 10 April. The *Speedwell* had completely discharged by 26 May *Hoare Cash Book*, f.415r.

158 *Hoare Letter Book*, f.155r Galpine to Hyde 16 January 1699.

159 *Hoare Letter Book*, f.170r Galpine to Hyde 19 April 1699; f.171r Galpine to Currant 28 April; f.173r Galpine to Currant 9 May; f.174r-v Galpine to Hyde 24 May; *Hoare Cash Book*, f.416r; 418r.

160 The Company was aware of an impending Act by January 1699: *Hoare Letter Book*, f.153v Galpine to Hoare 11 January 1699.

161 *Hoare Letter Book*, f.167r Galpine to Hackett 1 April 1699; f.175r Farewell to Fishers 3 June reports that Galpine has been in Bristol buying rock salt and is indebted to Abraham Elton on a bill of £100.

162 Most of Alloway's wool was high quality Irish combing wool brought mainly from Dublin, Waterford, Youghall and Cork. Supplies from Worcestershire brought via the Severn were also traded to Bridgwater, with some Irish wool traded in the opposite direction: SRO DD/DN 463 Account book of William Alloway, junior, 1695-1704, [hereafter, *Alloway Account Book*] pp. 5, 9-10, 19, 22, 28, 76, 83, 89, 92-4, 103, 106, 111, 116, 133, 136, 150-1. A brief account of Alloway's trade is given in Dunning, (ed.), *VCH. Somerset*, VI, p. 220.

163 In January 1699, Johnson shipped over 13,000 lbs of tobacco. Some of this was sold on to customers in Taunton and Exeter: *Alloway Account Book*, pp. 117-8, 120. In April, Oakes' trow, the *William* of Bridgnorth mastered by John Clarke carried 20,000 lbs of Virginia tobacco to Gloucester. Wakelin considers Alloway to be principally an 'internal merchant' and the shipment of tobacco to be a one-off: 'Trade on the river Severn', pp. 232-4, 248, 251-2. The *William* had arrived in Bridgwater carrying salt for Hoare and Company. See the discussion above.

164 *Alloway Account Book*, p.59.

165 Alloway owned shares in 'rock salt works' at Bridgwater, Taunton (probably Ham Mills), Shepton Mallet and Port Isaac in Cornwall: *Alloway Account Book*, pp.40, 54-5, 59, 64, 84. For the fishery at Lynmouth, which Alloway inherited from his father, William Alloway senior of Minehead (SRO DD/DN 462, f.1r-v), see *Alloway Account Book*, pp. 100, 134). The Bridgwater Port Books also reveal that Alloway acted as merchant for a letpass cargo of muscovado sugar, sherry and train oil shipped to Minehead on board the *Sarah* of Bridgwater in 1698. These commodities had originally been imported, independently, by Alloway and Hoare and Company.

166 Johnson's career is charted by Parkinson, *Liverpool*, ch. 7; Hughes, *Administration and finance*, pp. 225-41, 394-7; Barker, 'Lancashire coal, Cheshire salt', pp. 86-90; Challinor, 'Salt in Cheshire', p. 68. Johnson was described by Michael Currant, one of Hoare and Company's principal shippers as 'Mr. Allaway's friend in Liverpool': *Hoare Letter Book*, f.19r Currant to Galpine 7 August 1696. For return journeys organised by Alloway for Johnson: *Alloway Account Book*, p. 81, 118.

167 *Alloway Account Book*, p.2. Wheddon was a major merchant and factor owning 2 tenements and associated overland in Watchet: SRO DD/L2 19/110 (Box 128), assessment of Watchet 1708. See also, Minehead coastal Port Books and Wheddon's account of shipping in DD/WY bx 40, Account Book of duties at Watchet Quay, 1708-1764. The *Satisfaction* was often described as 'of' Minehead. The three-eighths share in the *Robert and Thomas* was probably increased after 1696, especially as the boat's regular shipper, Thomas Anstice, appears to have been more directly involved with goods shipped on board the vessel: *Alloway Account Book*, p.41.

168 *Alloway Account Book*, pp. 1, 6-7, 20, 23-4. The *Satisfaction* was taken by a French privateer to St. Malo in September and not ransomed until October: p.15.

169 *Alloway Account Book*, pp. 7-8, 17, 20, 23, 25.

170 *Alloway Account Book*, p.30.

171 The vessel had arrived in Liverpool by December of 1695 although it did not clear the port until February 1696. *Alloway Account Book*, p.30.

172 *Alloway Account Book*, p.41. The vessel was discharged by 10 May 1696.

173 *Alloway Account Book*, p. 39, 41. *Hoare Letter Book*, f.3r Minshall to Hoare 23? May 1696. Minshall supposed that Holmes' loading was on the Company's account.

174 *Alloway Account Book*, p.48. *Hoare Letter Book*, f.17v Pettitt to Hoare 2 August 1696 reports on Holmes' arrival in Liverpool; f.19r Currant to Galpine 7 August indicates the problems of procuring a loading.

175 *Alloway Account Book*, p.48-49, and p. 81 for the return freight to Liverpool dated 5 January 1697. Anstice accompanied his vessel in its laborious progress along the Welsh coast to Liverpool in May and June. The *Robert and Thomas* only cleared on 11 July. *Hoare Letter Book*, f.4r Higginson to Hoare 1 June 1696 at Oberson travelling in convoy to Hoylake; f.7v Neale to Company 19 June at Liverpool in convoy with the *Robert and Thomas*.

176 *Alloway Account Book*, pp.52-3.

177 *Alloway Account Book*, pp. 66-7.

178 *Alloway Account Book*, p. 142.

179 *Alloway Account Book*, pp. 56, 62, 80.

180 Alloway appeared as merchant in the Bridgwater Port Book. *Alloway Account Book*, p. 81.

181 *Alloway Account Book*, p.134.

182 *Alloway Account Book*, p. 117. Simon Hayman and Alloway's brother Joseph, merchants of Minehead, were paid cellarage for this salt in December 1698.

183 The corporation's Exchequer suit claimed that Richard Bobbett consistently defied custom by not paying town duties, keelage, pontage and the right of first sale to freemen on cargoes of coal 'and other merchandizes' shipped 'in small boates' to Ham Mills. PRO E134 23&24 Chas 2, Hil. 18, esp. f. 5r-v depositions; PRO E134 24 Chas 2, East. 24, f. 2r-3r.

184 These were major installations that were expanding their operation. In September 1698, for example, Galpine entreated John Padmore to 'provide ... a well made pan of 12 foott' for the Company. This was ready by December when a further '3 or 4 plates to mend the old one' were required from Padmore. *Hoare Letter Book*, f. 132r. Galpine to Padmore, 5 September 1698; f. 150r. Galpine to Padmore 17 December 1698. Padmore further provided the Company with an experienced pan setter and salt maker: *Hoare Letter Book*, f.154v. Galpine to Padmore 14 January 1699.

185 Chaloner, 'Salt in Cheshire', p.59. I thank Dr Malcolm Wanklyn for drawing my attention to this use of rock salt.

186 These were the first roads to be turnpiked in the area: Pawson, *Transport and economy*, p. 140.

187 PRO E134 23&24 Chas 2, Hil 18, f.5v.

188 The *Waste Book* only recorded regular agents and not the eventual users who often contracted the regular carriers to supply them. Some idea of the range of the Company's salt dealings can be gathered from *Hoare Cash Book*, f. 16r-18r.

189 Boldy was an important local carrier who maintained accounts with many local merchants: SRO D/B/bw 1524, Accounts of money from Vinsin Bolding of Langport, 1716-9. See also *Hoare Waste Book*, f.319v, 332r for examples of Boldy taking salt. The Parrett and Tone was only effectively made navigable to Taunton after the gradual enforcement of successive improvement Acts in the early eighteenth century: Willan, *River Navigation*, pp. 31, 48, 56, 155.

190 *Alloway Account Book*, pp. 7-8, 17, 31, 40. Bobbett consistently received most of Hoare and Company's salt after the Ham Mills factory was supplied: *Hoare Waste Book*, f.199v for example. On one occasion Bobbett was able to sell a loading ordered from Sir Robert Throgmorton to Hoare and Company: *Hoare Waste Book*, f. 365v; *Hoare Letter Book*, f.129v. Galpine to Padmore, 17 August 1698.

191 *Hoare Letter Book*, f.81r Thomas Galpine to Nathaniel Galpine 12 January 1697; f.81v Hoare to Galpine 12 January 1697.

192 *Alloway Account Book*, p. 16, 17, 40, 48, 57.

193 *Hoare Waste Book*, f. 374r-v.

194 *Hoare Waste Book*, f.348v.

195 *Hoare Waste Book*, f.249r, 252r, 253v, 287r, 294r, 369r. *Hoare Letter Book*, f.126r Galpine to Hyde 15 June 1698 (cinders); f.138r Galpine to Stonard 15 October 1698 (vinegar).

196 *Hoare Letter Book*, f.41r Mackworth to Hoare 2 October 1696. See also Mackworth to Company 9 December 1696 (loose leaf insert). Mackworth's importance in reviving the coal trade at Neath is chronicled by Evans, 'Mackworth's industrial activities'; Trott, 'Coalmining in the borough of Neath', pp. 47-74; Rees, *Industry before the industrial revolution*, pp. 88-9, 109-110, 523-5. See also Mackworth's vigorous defence of his Company of Mine Adventurers: *Affidavits, certificates, and presentments*; *Answer to several objections*; *The case of Sir Humphry Mackworth*; *The Mine-Adventure*. Between 1698 and 1700, Mackworth had extensively dealings with the bankers Hoare and Company of London. This may have followed his relations with the Somerset branch of the family: Roberts, 'Financial developments in Early Modern wales', pp. 300-1.

197 As well as Sir Edward Mansell, the Company also dealt with William Beaver of Swansea, an Evans of Neath, and James Phillips of Tenby: *Hoare Letter Book*, f.28r Cockrem to Galpine 28 August 1696; f. 176r Galpine to Hyman 6 June 1699. *Hoare Waste Book*, f.190r; 319v. See also Hatcher, *Coal industry*, p.139; Rees, *Industry before the industrial revolution*, pp. 538-40.

198 *Hoare Letter Book*, f.84v Thomas Galpine to Nathaniel Galpine 19 January 1697; f. 93r Thomas Galpine to Nathaniel Galpine 13 February 1697.

199 According to Neale writing from Dublin, Milford culm outsold Tenby culm by a shilling a ton, whilst the inferior Saundersfoot culm he was carrying could only be sold for almost 3 shillings a ton less than Tenby culm: *Hoare Letter Book*, f.33v Neale to Galpine 10 September 1696; f.37v Neale to Galpine 25 September 1696. The price differential between the three types of coal varied according to the level of supplies, season and credit extended to the customer. However, in January 1697 Swansea hearth coal sold at between 34s 2d and 36s 2d per wey, 'Abbey' or Neath coal at between 25s 2d and 27s 2d per wey; and culm at a more consistent 27s 2d per wey: *Hoare Waste Book*, f.259v-260r. See also Nef, *Coal Industry*, pp. 116-7 for the different grades of coal.

200 Nef, *Coal industry*, pp.373-4; Rees, *Industry before the industrial revolution*, pp. 129-32; Symons, *Llanelli*, pp. 324-30.

201 Hatcher, *Coal industry*, p. 571.

202 Nef, *Coal industry*, p.370; Willan, *Coasting trade*, pp. 208-9.

203 This implies that the London measure was used throughout the region, which Rees seems to suggest at least for overseas trade. *Industry before the industrial revolution*, p.131. See also *Statutes of the Realm*, 6 and 7 William and Mary, c.10 and Hatcher, *Coal industry*, p. 559.

204 Hatcher, *Coal industry*, p.569. Hatcher dismisses the Pembrokeshire chaldron by omission, concentrating upon the differences between and debate surrounding the measuring of the London and Newcastle standards (pp. 559-69).

205 *Hoare Waste Book*, f.204v. If a way measured 5 tons, a quarter 6 cwt (Nef, *Coal industry*, p.373), and a bushel 56lb, 530.45 tons of coaql were sold by Wallis in 1696.

206 *Hoare Waste Book*, f.204v, 205v, 206v, 208r, 219v-220r, 222r, 224v, 226r, 227r, 230r, 233r, 235v, 236r, 237v.

207 *Hoare Letter Book*, f. 81r Thomas Galpine to Nathaniel Galpine 12 January 1697; f. 93r 13 February 1697.

208 The details of shipments are gained from the Bridgwater Port Books and *Hoare Waste Book*, f. 241r, 244v, 245r, 246r, 247v, 249r, 254r, 256r, 257v, 259v-260r, 263r, 264v-265r, 266r, 267r-v, 268v, 269v, 270v, 274v, 282v, 288v, 291r, 296r.

209 182 tons of culm and 60 barrels were transported on board the *Two Sisters* in 1697. Taking Nef's conversion of 7.5 barrels to the ton, the vessel carried an equivalent of 8 tons: Nef, *Coal Industry*, pp. 371-2; Owen, *Pembrokeshire*, p.92 for the use of the barrel to ship culm. The *Two Sisters* may well have been operating for the Company the previous year, although there is no evidence which directly ties the 11 shipments it undertook with coals received by the factory or dispensed at the quayside.

210 By 1698, Wallis's contract with the Company to freight the *William and Richard* had expired; *Hoare Waste Book*, f. 321v.

211 *Hoare Waste Book*, f. 317r, 321v, 329v, 333r-334v, 341v, 350v, 352r, 353v, 357r, 370r, 371r, 373r-v, 376r-377v.

212 *Hoare Letter Book*, f.176r Galpine to Hyman 6 June 1699.

213 Bridgwater Port Books and *Hoare Waste Book*, f. 233r.

214 *Hoare Letter Book*, f.75r Smith to Hoare, 28 December 1696; 82v Smith to Hoare 11 January 1697; 84v Smyth to Galpine 16 January 1697; 98v Smith to Galpine 20 February 1697. The *Thomas'* loading brought only 1,627 bushels of grain specifically for Smith and Hoare, some was freighted for Joseph Hunt of Upton. In addition, Smith ventured 18 bags of wool (from a total of 53 bags) on his own account to be delivered to Charles Cork of Taunton.

215 *Hoare Letter Book*, f.92v Smith to Galpine 8 February 1697. For the importance of the 'marlstone uplands' surrounding Banbury as a grain producing area, see Wordie, 'The south', pp. 317-20.

216 *Hoare Waste Book*, f.275r-276r. A further 36 tods (at 28 lb per tod) were carried by the *Thomas*.

217 For details of the Company's contract with Smith, see *Hoare Waste Book*, f. 275r-276r, 282r, 283v-284r, 290v, 293r-v.

218 The Company weighed out 1,187 bushels of wheat and malt. Some was accounted 'lost' and some may have been distributed as freight. Smith appeared as the named merchant on the wool coquet although his loading amounted to only 85% of the wool carried by the *Success*. *Hoare Waste Book*, f.286v-287r.

219 *Hoare Waste Book*, f.284r. All measures have been converted to the Winchester bushel as outlined in Chapter 4 and, with modifications, Wakelin, 'Trade on the river Severn', pp. 141-2 and n.28. There is some discrepancy between the Company's accounts and the Bridgwater Port Books. The Company itemised 36 bags carried on the *John and Elizabeth* and not 34. This probably indicates a scribal error in the coquet (the same amount appears in the outwards section of the Gloucester Port Book). The research has standardised upon the Port Book.

220 *Hoare Waste Book*, f. 290v, 293r-v, 301v.

221 *Hoare Letter Book*, f.27v Smyth to Galpine 29 August 1696; f.28r Cockrem to Galpine 20 August 1696. *Hoare Waste Book*, f. 255r. See also Chartres, 'Marketing of agricultural produce', p. 224.

222 *Hoare Waste Book*, f. 326r.

223 Gloucester exported 82,827 bushels of grain and cereal crops coastally in 1695. The following year, 110,777 bushels were recorded and in 1699 only 72,767. In 1701 this figure had risen to 104,932 bushels, dropping to 71,348 bushels by 1704, the next fully recorded year. See Wakelin, 'Trade on the river Severn', pp. 140-2 for a longitudinal analysis of the grain trade from Gloucester.

224 Lamb, *Climate*, p. 219; Le Roy Ladurie, *Times of feast*, pp. 118-20, also reviewed by Post, 'Meteorological historiography', pp. 721-30. See also de Vries' stimulating discussion of climatic cycles and climate change: 'Climate on history', pp. 38-50.

225 Hoskins, 'Harvest fluctuations, 1620-1759', pp. 22, 24, 30. See also Ashton, *Economic fluctuations*; Chartres, 'Marketing of agricultural produce', pp. 210-16; Jenkins, 'Times and seasons', pp. 21-22.

226 Chartres, 'Marketing of agricultural produce', pp. 208-9.

227 BAO 04434/3 pp. 77-8. The Liverpool Port Book records Thomas Hinde as merchant.

228 BAO 04434/3. pp. 83-5, 92. Trewell was ordered to be distrained on 21 September 1699.

229 BAO 04449(2) 9 January 1705. For Nixon and Woodruffe: Hughes, *Administration and finance*, p. 391.

230 BAO 04449(2) 13 August 1707.

231 BAO 04449(2) 10 April 1706.

232 BAO 04449(2), unpaginated, 11 December 1706, 3 May 1709.

233 Beavan, *Bristol Lists* provides details of Elton's official positions. In 1696 in association with Gilbert Wayne, Elton established a copper works at Conham; Jenkins, 'Copper works at Redbrook', pp. 163-6. Wayne and Elton were indicted in 1700 for 'putting a great quantitie of cinders and ashes upon the bank of the river Avon below Hannam Mills': BAO 04452(1), Presentments of Grand Jury, 1676-1700, p. 80. Minchinton, 'Trade of Bristol', pp. 143-4 summarises Elton's career. See also Powell, *Privateers*, pp.90-101, Latimer, *Annals of Bristol in the eighteenth century*, pp. 96, 130, 160, 162, and Cave *Banking*, pp. 232-3 quoted in Minchinton, 'Trade of Bristol', p. 143. Elton also brought foreign salt to Bristol from Falmouth on board the *John* of Falmouth in 1701: BAO 04434/3 pp. 137-8.

234 Scandrett freighted salt on the *Mary and Martha* of London, Samuel Paine master; the *John and Mary*, John Burgess 'master and commander' with 2,200 bushels of rock salt; the *Globe* of Milford, William Butterfield on board; and the *Endeavour* of Bideford with John Chappell as master and 1,200 bushels on board. BAO 04434/3 pp. 122-3, 162-3, 163-4, 176-7.

235 BAO 04434/3, pp. 144-5. Bearpacker (variously Beerparker, Barepecker) appears to have generally acted as a factor. In 1696 and 1697 he dealt with Hoare and Company in goods imported on the *Bonavist*: *Hoare Letter Book*, f.81r Hooke to Drake ?12 January 1697. A John Bearparker, 'soap maker' of Castle Ward, was distrained for a debt outstanding on tobacco bought in 1692 (BAO 04413, Actions and requests, f.42r) and in 1717, a John Bearpacker, merchant is recorded. (BAO AC/JS 89).

236 BAO 04449(2) 6 December 1704. Alloway dispatched peas ordered by Thomas Johnson to Baker in 1699: *Alloway Account Book*, p. 119.

237 Wakelin, 'Trade on the river Severn', pp. 201-10; Hughes, *Administration and finance*, p. 379, n. 1456.

238 In July 1700, William Perkes claimed that the 128 bushels and 4 gallons of English white salt shipped without certificate was part of a cargo taken out of the *Billy* at Worcester and put on the *Providence* in the presence of Excise officials. The Gloucester Port Books reveal the voyage to be undertaken by Jackson. Subsequent indictments indicate that porters at Worcester were confused by Perkes' trows the *Providence* and the *Prosperity*, often loading the wrong consignment. BAO 04434/3, pp.119, 151-2, 170, 189-90.

239 BAO 04434/3, p.130; BAO 04449(1), f.98r. For Lane, see Hughes, *Administration and finance*, pp. 244, 379.

240 BAO 04434/3 pp.83-5.

241 BAO 04434/3 pp. 94-5. Lewis was recorded as master and merchant in the Gloucester Port Book.

242 Burnall was 'captain' to the *Blessing* on her arduous voyage from Liverpool to the south Cornish coast, finally discharging her load of salt at Fowey. Burnall appears to have been entrusted with selling the cargo, Venicott with skippering the vessel: *Hoare Letter Book*, f. 83r Burnall to Hoare 10 January 1697; f.110v Burnall to Galpine 3 May 1697.

243 *Hoare Waste Book*, f.320r.

244 Defoe, *English tradesman*, p. 8.

245 See Willan, *Coasting trade*, pp. 43-46.

246 Chartres, *Internal trade*, p. 66.

247 Willan, *Coasting trade*, pp. 53-4.

248 See, for example, the methodological work of Harvey and Press on database design, record linkage and Bristol: 'Business elite of Bristol', pp. 1-11; 'Relational data analysis', pp. 98-109. Also, King, 'Record linkage', pp. 27-33 and Vetter, Gonzalez, and Gutmann, 'Computer-assisted record linkage', pp. 34-51, provide useful indications of the capabilities of relational systems.

Notes to the Conclusion.

1 Chartres, *Internal trade*, p. 13.

2 See Willan, *Coasting trade*. Studies which have used coastal Port Book material to illustrate the trade and economy of individual ports include, Woodward, *Chester*; Williams, *East Anglian ports*; Metters, 'King's Lynn'; Evans, 'Ipswich'; Lewis, 'Welsh Port Books'; and Hinton, 'Boston'. Studies of individual commodities can be found in the Introduction, but see Nef, *Coal industry*; Burt, 'Lead production'; and with particular relevance to the region, Grant, *North Devon pottery*. Andrews' critiques of Port Book evidence can be found in 'Two problems', although such problems did not affect his own use of the source: see Andrews, 'Chichester and the grain trade'; 'Thanet seaports'; 'Trade of Faversham'.

3 Wakelin, 'Comprehensive computerisation'; Wanklyn, 'Shrewsbury boats'; Wakelin, 'Trade on the river Severn'; Wanklyn, 'Bridgnorth'; Hussey, Milne, Wakelin and Wanklyn, 'Summary' (forthcoming); Cox, Hussey, and Milne, 'Gloucester Port Books database on CD-Rom' (forthcoming).

4 The Bristol Channel contained 13 Head and Member ports (counting Swansea and Neath as one entity and Bideford as contained within the Customs jurisdiction of Barnstaple) from a total of 70 centres nationally: Williams, *Descriptive list*.

5 The series of coastal Port Books terminate for all ports under Cardiff in 1719, at Barnstaple in 1719 and at Ilfracombe in 1733, suggesting strongly that the system was in decay by the early eighteenth century: Williams, *Descriptive List part 2*; Grant, 'Port books', pp. 58-9.

6 Andrews, 'Two problems', p. 120. An illustration of the increase in goods and notional values can be gained by examining the revisions to the 1660 Book of Rates published in 1724.

7 Willan, *Coasting trade*, pp. 68, 70, 77, 93, 173-5. See also the discussion by Wakelin, 'Trade on the river Severn', pp. 261, 264 which attributes Willan's oversight to the impact of increasing levels of trade upon the Port Book record. The issue is contextualised in Hussey, Milne, Wakelin and Wanklyn, *Summary*.

8 See the critique by Jarvis, 'Sources for the history of ports', p. 81.

9 It would, for example, be possible to reconstruct the destroyed London Port Books for the eighteenth century using such a methodology: Clark, *Guide*, p. 55; Jarvis, 'Sources for the history of ports', p. 80; Williams, 'London Port Books', pp. 13-26.

10 See Milne and Paul, 'A flexible model for Port Book studies' in comparison to Wakelin, 'Trade on the river Severn', pp. 59-76. Cox, Hussey and Milne, 'The Gloucester Port Books database on CD-Rom' (forthcoming) contains important recommendations for further work.

11 Armstrong and Bagwell, 'Coastal shipping', p. 152.

12 Willan, *Coasting trade*, Chapters 5 and 6; Willan, *River navigation*, pp. 2-5; Chartres, *Internal trade*, pp. 43-6.

13 Chartres, *Internal trade*, p. 43. See also Gras, *Corn trade* and Nef, *Coal industry*.

14 See Appendix II and Table 3.1.

15 The problems with recording fish caught or processed in deep water or technically overseas locations are discussed by Grant, 'Port Books', p. 62. Some information regarding the inshore fisheries is given in Gray, 'Devon's fisheries', pp. 139-41 and Southward, Boalch and Maddock, 'Fisheries of Devon and Cornwall', pp. 33-4, 37-9. No quantitative work has been applied to the unique record of

Ilfracombe: Grant, 'Devon shipping', pp. 136-8.

16 Wakelin, 'Trade on the river Severn', pp. 258-62 gives a more in-depth account of the trade through Gloucester than space permits here. See also the commodities outlined in Hussey, Milne, Wakelin, and Wanklyn, *Summary.*

17 Figures based on comparing the 1699 Port Book evidence with the average amount of tobacco retained at Bristol between 1722 and 1731 as outlined in the Parliamentary ten-year return, (*Jo. House of Commons*, XXII, pp. 27, 58) reprinted in Minchinton, 'Trade of Bristol', p. 15. However, Schumpeter and Nash indicate from national figures that the *legal* amount of tobacco imported in the 1720's may have fell by around 10% of the levels imported in the late 1690's: Schumpeter, *English overseas trade*, pp. 61-2; Nash, 'English and Scottish tobacco trades', pp. 366-8. See also Shammas, *Pre-industrial consumer*, p. 79. This may overestimate the amount of tobacco retained and traded coastally by Bristol.

18 Ashton, *Economic fluctuations*, p. 5 quoted in Chartres, *Internal trade*, p. 45.

19 Lamb, *Climate*, p. 223; Stretton, *Agricultural records*, p. 61.

20 *Hoare Letter Book*, f. 112v Tuthill to Galpine 10 May 1697.

21 Minchinton, 'Port of Bristol', p. 132 (reprint pagination).

22 BCL B11153 (2) Southwell Papers (Romsey and Knight papers), unfoliated, Thomas Abraham to Sir Robert Southwell, Banbury 19 May 1684. Vickers, a freeman of Tewkesbury, made 7 voyages in 1680, 20 in 1681, 20 in 1682, 21 in 1683, and 10 in 1684 after which he does not appear in the Port Book record: 'Tewkesburian', *Tewkesbury*, p. 244.

23 Chartres, *Internal trade*, p. 46. See also Willan, *Coasting trade*, pp. 13-20; Davis, *English shipping industry*, pp. 76, 194-5, Appendix A.

24 See Chapter 4, section ii.

25 *Hoare Letter Book*, f.125r-126r Company to Paul and Anthony Methwen; Chanler; Town; Smith; Lloyd; Barnsdale; Bayly regarding Thomas Claroe's goods and how to sell them, 10-11 June 1698. *Hoare Letter Book*, f. 144v-145v Company to Hoare; Padmore; Herbert; Lloyd; Hall; Hoare regarding delivery of goods by Charles Corker and further orders 19-29 November 1698.

26 See Chapter 5, section iii. The long-distance metropolitan carrier is outlined by Chartres, 'Road carrying', and Gerhold, 'London carrying trade'.

27 Willan, *Coasting trade*, pp. 46-7.

28 Chartres, *Internal trade*, p. 51, 55; Stern, 'Cheese shipped coastwise'; Stern 'Fish marketing'; Nef, *Coal industry*, i, pp. 102-13, 405-10, ii, pp.84-108. For the role of middlemen in the pre-industrial economy see Westerfield, *Middlemen*, pp. 349-69.

29 Nef, *Coal industry*, I, pp. 224-61.

30 Nef, *Coal industry*, I, pp. 53, 79, 87-91, II, pp. 359-61 claims that coastwise trade from the south Wales ports amounted to around 75,000 tons in 1681-90. Nef is almost certainly mistaken in applying a 'west-coast' chaldron (of 2 tons) to Pembrokeshire cargoes clearing Milford and Tenby assessed under London measure metage (circa 1.4 tons) See Appendix C, especially p. 370 and criticisms of this by Hatcher, *Coal industry*, pp. 559-69.

31 Nef, *Coal industry*, I, pp. 65, 97, 360. In 1699, 20 shipments carrying 281.5 tons of coal entered the coastal trade, predominantly bound for Bristol. In addition, slightly over 693 tons were

traded from Bristol, 604 tons in returning Severn trows. Because of the proximity of Kingswood Chase and the wider coastal trade to Bristol, it is impossible to state confidently how much of this coal was transhipped.

32 Rowe, *Cornwall*, pp. 19-20; Rees, *Industry*, pp. 501-4, 572-8; Roberts, 'Copper industry', pp. 125-60; Pearse, *Ports and harbours of Cornwall*, pp. 120-1. Payton, *Cornwall*, pp. 73-83 advances the inequality of this cyclical trade as a reason for Cornish peripheralisation in the eighteenth and nineteenth centuries. The coastal Port Books reveal that Padstow exported one consignment of copper ore to Neath in 1696 and one in 1704: most went to Chepstow (Redbrook); Bristol and Liverpool.

33 Neale, *Bath*, pp. 16-18; McIntyre, 'Bath', pp. 197-249; Fawcett, 'Selling the Bath waters'; Twaite, 'Bristol Hotwell', pp. 112-26. The trade may be linked to the growth of Shrewsbury as a 'leisure' town: McInnes, 'Shrewsbury'.

34 Weatherill, *Consumer behaviour*, pp. 16-21, 28-36, 84-7. For the ownership of such goods in a regional context, see Trinder and Cox, *Yeomen and Colliers*, pp. 99, 102.

35 Shammas, *Pre-industrial consumer*, pp. 78-81. Shammas argues that 'a grocery item will be considered to be mass consumed if enough was imported to allow 25% of the adult population to use it once daily' and that 'by c.1670 ... 2 lb. of tobacco a year would probably allow enough for every person to have a pipeful a day'. This presumes that amounts imported equate linearly to amounts retained, which is somewhat debatable. The figure of 2 lb. per person per year has been taken as the criterion of mass consumption to allow for changes in regional population levels (and percentage comprehension of adults) between c.1670 and c.1700. It is likely to be an underestimate of the numbers of regular smokers. See also Goodman, *Tobacco*, Chapter 4.

36 Minchinton, 'Bristol - metropolis', pp. 73-8.

37 The nearest estimate in date and source remains Willan's enumeration from the 1683 coastal Port Book of 4,131 voyages entering London and 1,001 clearing the port: *Coasting trade*, pp. 204-7.

38 Minchinton, 'Trade of Bristol', p. 5 and Minchinton, 'Port of Bristol, pp. 131-2 (*reprint* pagination) enumerate 240 vessels entering Bristol from overseas between 25 June 1699 and 25 June 1700. No figures are readily available as to clearances. However, even in the unlikely instance that all vessels re-embarked overseas with Customable goods (and later figures suggest overseas clearances to be rather less than entrances) only 480 shipments or between 28 and 30% of coastal voyages can be said to have been involved in the overseas trade. For a slightly different set of figures (December 1699 to December 1700) see McGrath, 'Merchants and merchandise', p. 281.

39 See Morgan, 'Bristol and the Atlantic trade', pp. 642-5 quoting Price and Clemens, 'Revolution of scale in overseas trade', pp. 39-40, who emphasise the growth of Liverpool and Whitehaven as rival tobacco shippers in the 1730s and 1740s.

40 Sacks, *Widening gate*, pp. 255-77, 307-29.

41 Clark, 'Adventurous merchants', p. 160.

42 Greenstein, *Historian's guide to computing*, p. 60.

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1142B/T22/110	Premises in Fremington.
1142B/T22/279A	Property at Fremington.
1843/A/PF 73	Northam Parish Register: Trust deed.
1843/A/PR 3	Northam Parish Register: Erection of a quay etc. at Northam, 1601.
2008 B/LI	Land in Appledore, 1712.
2239/B/add5/m1	Transcript of dispute over rights of the manor of Northam, 1716.
2379/A/Z 4	Bideford Court of Record and Minute Book, 1709-15.
3479M/L6	Parties to lease, Barnstaple, 1714.
4227m/T2	Bonds, 1701.

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